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Coal Production Plans

THE railway implications, in the transport and consumption of coal, of the National Coal Board proposals, "Plan for Coal," for increasing production in 1950-65 were discussed in our issue of November 24, 1950. British Railways, as coal carriers, were consulted in formulation of the plan, which provides for a yearly output of 240 million tons by 1965. Taking into account increased use of power transmission lines, the location of new power stations and of new pits in or near existing coalfields, and the coal traffic handling facilities provided by the railways before nationalisation, the plan seems to necessitate little new siding or branch construction; nor does wagon supply, provided that steel for new wagons is made available, or line capacity seem likely to present difficulties. Implications in "Plan for Coal" that railway capacity, notably in movement across the Pennines, might restrict colliery development still need clarification; but with the completion of the Manchester-Sheffield-Wath electrification and of the new Woodhead Tunnel, the carrying capacity of British Railways seems adequate for the purposes of the plan. As consumers, the railways stated their needs were unlikely to change. The Federation of British Industries has now submitted evidence to the Committee on National Fuel Policy set up by the late Government. The Federation assesses total demand in 1965 at 293 million tons, and the total availability of solid fuel in that year at 250 million. Economies, therefore, must be exercised, and consideration

given to the use of other types of fuel. The railways, it is stated, should extend electrification and the use of diesel, diesel-electric, and ultimately of coal-burning gas-turbine locomotives, so as to reduce coal consumption; attention is drawn to the assumption in "Plan for Coal" that no great technical changes in traction are contemplated. Despite the developments now taking place in diesel and gas-turbine traction, it would be impossible for the railways to base their estimate of coal consumption in fifteen years' time on any other assumption. The F.B.I. also seems to query British Railways' coal carrying capacity in 1965, as in the provision of wagons. The answer is in the allocation of materials and authority for capital expenditure on improvements, and lies largely with the Government.

Railway Salary Anomalies

IN our issue of January 18 we dealt at some length with various anomalies in railway salary adjustments. In the course of that article it was stated that one point arising from recent salary advances which has been unfortunate in its reaction was the absorption of "merit" increases in the back-dated more general adjustments. Attention was drawn to this point because there was a feeling widely held among railwaymen and also employees of other Executives that this had been the case and a good deal of dissatisfaction had arisen as a result. We have been assured on behalf of the Railway Executive that in no case was a merit increase absorbed either wholly or in part by the more general back-dated advance. It has been explained that all proposals for merit increases were considered irrespective of the fact that it was known at the time that a more general advance was imminent. In some cases the full amounts of the proposed merit increases were not granted, but this was for a reason other than the impending general advance. When the percentage increase was announced immediately afterwards there was a natural surmise on the part of some of those whose merit advances had not been met in full that part had been absorbed in the more general increase.

Need for Understanding

A PART from the widely-held misapprehension about the absorption of merit increases—by no means confined to employees of the Railway Executive—there are other aspects of transport officers' salary policy which appear anomalous to many both within and without the industry. The explanation given in the foregoing note as to the way in which this arose in our view lends emphasis to the need for ensuring that justice must not only be done but must be seen to be done. At present it is inevitable that many transport officers tend to compare existing practices with those which obtained before nationalisation. The very size of the State-controlled transport undertaking in relation, for example, to the businesses of the main-line railway companies must make for more ponderous machinery, for delays in the consideration of claims by individuals, and for a more impersonal atmosphere. One of the most difficult tasks which the present administration has to face is overcoming the impersonality which results from its size. It is easy in so large an organisation for whole sections of employees to get the feeling that they are "forgotten men." Any impression of this kind soon spreads and has the most unfortunate effects on morale, more especially in the case of such grades as District Officers. This is not a matter to which the Railway Executive is blind, but it is a problem which calls for, and will continue to merit, the most assiduous attention.

A Channel for Information

ONE of the means by which the Railway Executive is endeavouring to pass information from the higher levels down through the network of its staff is by a feature it has been running for some time in *British Railways Magazine*. This takes the form of a commentary signed by "the Man on the Line" and is the first item in the editorial of each section of the magazine. A number of items of general interest, usually involving policy, has been dealt with in this

way. Clearly, the endeavour is to bring to the notice of a necessarily scattered staff salient points which those at headquarters feel might with advantage be better understood by the general body of railway personnel. To be effective, it is clearly essential that these articles, while avoiding the form or language of official pronouncements, should convey factual information and points of argument of value to the varying grades of staff. In general, this objective appears to be being achieved. There is a good deal of scope for the dissemination of news and views of this kind and, if skilfully handled, the feature should prove of value to railwaymen in promoting a better understanding of policies with the details of which they cannot be expected to be in close touch.

Training of Transport Officers

FOUR years after nationalisation with the avowed intention of integrating the different forms of State-owned transport, there still is no provision under the auspices of the British Transport Commission for the training of transport officers as such, as opposed to railway officers, road haulage or docks managers, and so on. In pursuance of its statutory obligations, the Commission has evolved a comprehensive training scheme for all grades, which is being implemented by the Executives; in some instances, notably in British Railways, in their residential schools at Darlington, Derby, and Woking, the scheme continues training facilities provided before nationalisation. The sphere of training, however, generally is confined to the mode of transport of the Executive concerned. The broader aspects of transport are touched on in advanced specialist courses, and the study of transport charges in commercial instruction arranged by the Railway and other Executives entails some consideration, even by relatively junior students, of transport correlation. Here is a gap which needs filling, for the leaders of the nationalised transport industry must be trained in terms of the industry as a whole.

B.T.C. Staff Training Facilities

A SURVEY of the training facilities for staff of the British Transport Commission and its Executives occurs in the paper "Training for Transport" read by Mr. Frank Gilbert, Principal Staff Officer of the Commission, to the Railway Students' Association last Wednesday. After drawing a proper distinction between training and education, Mr. Gilbert describes the formation and scope of the Benstead Committee in 1948, as a first step to implement statutory obligations to provide training, and of the Training & Education Joint Advisory Councils. He outlines different types of training: induction, or the introduction of new employees by booklet and verbal instruction, training on the job, training in safety, apprenticeship, training for supervision, and the establishments for initial and promotional training under the several Executives, including the centres managed by the London Transport Executive for its own staff. Due regard is paid by Mr. Gilbert to the "many enthusiastic groups of trainers doing splendid work" in nationalised transport, more particularly, perhaps, in British Railways, throughout the country, to the measures taken to train teachers, and to the part played by mutual improvement classes in the maintenance of British Railways motive power at a high level of efficiency.

Selection of Leaders

ON the controversial topic of training for management, Mr. Gilbert is fair in stating the pros and cons of university education, and draws attention to the more widespread opportunities now existing for such education, which, he considers, strengthens the case of graduates for entry into transport "above the ground floor"—provided that there are plenty of chances for those who do not go to a university. He stresses the importance of learning "how to delegate." The work of the main-line railway companies in instituting traffic apprentice schemes is described, also the manner in which this work has been continued, with some modifications, since nationalisation,

and the cadet scheme for British Road Services. Mr. Gilbert stresses his belief in the necessity for training, although its monetary cost cannot be assessed, but he points out that all systems of training fail—or are not carried far enough—unless they serve the main purpose of giving service to the customer.

A Momentary Lapse of Attention

THE fatal accident at Ford on August 5, 1951, was a case where a driver's attention became momentarily distracted by seeing a clear track ahead, causing him to overlook signals in full view. From our summary of Brigadier C. A. Langley's report in this issue it will be seen that the colliding train normally passed the one in front at this place and that the first train had, as usual, arrived in the loop line platform. It had stopped, however, with its rear wheels just on a track circuit which prevented the main to loop points from being restored to lie for the main line. The signalman duly stopped the second train at the outer home signal and then cleared that to bring it forward to the directing inner homes which, there is no doubt, were at danger. When the driver, who was killed, came on to the straight part of the track he could see his usual platform road to be clear and must have forgotten for the moment all about the inner homes, continuing on until suddenly turned aside at the facing points into the back of the waiting train.

Comparison of Locomotive Ratios

THE completion of the first four main-line tender locomotive types built as standard by British Railways, marks the commencement of a new epoch in the annals of British locomotive practice. It is therefore not surprising that the appearance of these new designs has aroused a large amount of interest. The two outstanding locomotives are the Pacifics, which have different axle loadings. Both are notable for their ample boiler capacity in relation to their rated tractive force—a good point, and one attainable with the 4-6-2 wheel arrangement. No doubt both locomotives will have a good reserve capacity, while, under normal running conditions, a relatively high boiler efficiency will aid economical operation. The two 4-6-0 locomotives call for little comment. The larger of the two differs little from the original class "5" mixed-traffic locomotives of the former L.M.S.R. The new engines have in fact, the same boiler, rather larger cylinders, and are somewhat heavier, resulting in a higher value for the adhesive factor. The proportions in general, are like those of the class "B1" engines built for the former L.N.E.R. Further comparisons are brought out in an article elsewhere in this issue.

A Versatile Mixed-Traffic Electric Design

THE use of 750-V. motors permanently connected in pairs in series has necessitated a wide range of field-weakening in the Eastern Region Bo+Bo locomotives, to provide the required flexibility with only two motor groupings. Although the reductions in field strength are not as drastic as those adopted in the latest mixed-traffic electric locomotives of the French National Railways, which use similar motor connections, a highly adaptable design has been achieved. This is well demonstrated by a study of the performance curves accompanying an article on the electrical design of the locomotives elsewhere in this issue. The ability to cope when necessary with running on the resistances for considerable periods has been shown by the performance of the prototype in Holland, which in accelerating a 1,750-ton train up 1 in 125 from a standing start on the level has operated in the resistance notches for seven minutes continuously without adverse effects on the equipment. Excitation for regenerative braking is obtained from a motor-generator, and this arrangement, combined with a stabilising resistance carrying the regenerated and excitation currents, has proved itself in other Metrovick locomotives as a satisfactory means of compensating for line voltage changes while braking without complication of the equipment.

Production in Industry

IMPORTANT truths on the condition of British industry were stated in the House of Lords debate last week, more particularly by Viscount Waverley, better known as Sir John Anderson until his elevation to the peerage in the New Year honours. Comparing the situation at the end of hostilities in 1945 with the present situation, Lord Waverley stressed the greater gravity of the present crisis. Although, in 1945, the prospective gap in the overseas trading account was no less, every other circumstance was favourable; the chief need at that time was to free production from armament and turn it into production for overseas markets.

Now, as Lord Waverley has stated, exports must be increased and armaments produced simultaneously, whilst the export market is increasingly difficult to capture for various reasons, with the reappearance of German and Japanese competition in those industries, including sections of the railway material industry, which are important in our export trade. On the subject of the economic situation in 1945, he briefly alluded to the hostages given to fortune by the newly-elected Labour Government and to the failure to build up reserves against an emergency, particularly the failure to preserve or create a margin of taxable capacity as an element of strength. The desirability of maintaining taxable capacity in industry has been the subject of comment in this journal from time to time in recent months. As to the hostages to fortune, one of the greatest was the failure of the then Government, intent on carrying through its programme of legislation for social services, and nationalisation of certain industries, soberly to assess the country's position in overseas trade and payments and to warn the nation of the seriousness of the situation. This would have entailed the unpopular step of stressing the need for increased production so as to be able to compete, when the seller's market should come inevitably to an end, in export trade. In 1945, German and Japanese competition was doubtless hard to foresee, as was the significance of American technology in industrial productivity, but the Government attitude was unduly optimistic even in the circumstances of victory; and the importance of sheer hard work, only one factor, but an important one, in productivity, was allowed to be minimised or forgotten by wage earners then and in subsequent years to an extent which has harmed industry ever since.

The import cuts recently made by the Chancellor of the Exchequer to arrest the flow of gold and dollars are, as Lord Waverley pointed out, only a palliative, and clumsy in their effects, but they are a necessary evil in the circumstances. It would indeed be pleasant if, as he suggests, there were immediate means of increasing production without encroachment on consumption or development. We must all, he continues, "work as hard as we can and seek to abolish artificial limitations on production." Obstacles to industrial production include restrictive practices as to hours worked, employment of non-union labour, reluctance to make full use of machinery, and so on. Although other factors, such as shortage of steel, at the moment may affect production, restrictive practices on the part of trades unions and employees are a menace to production, as is the sensitiveness in matters such as dismissals which leads to strikes and threats of strikes.

On the brighter side, there are factors more favourable to industrial production now than before, such as the results of scientific research and use of labour-saving devices, though here again there has been reluctance by some workers to accept what they suspect may endanger their employment; and there has been prejudice, though on a relatively small scale, against new methods on the part of some employers—though lack of funds, because of excessive taxation, to plough back into their businesses often may be the reason for apparent reluctance. The productivity teams that have visited the U.S.A. have done much to introduce useful technological methods to this country. It is good to read in many of the reports of the individual skills displayed in British industry; but the comparative

backwardness of British methods in some aspects of production is sobering to read of, though this should be, and is proving to be, a challenge to this country. More serious, perhaps, are the comments made in several reports on the different, and more enlightened, attitude of the American wage earner to production. There is, however, reason to think that the industries supplying railway material are less at a disadvantage in this respect, compared with American, than are some other British industries.

Reference was made in the House of Lords debate to some complacency in British manufacturers; Lord Noel-Buxton deprecated a tendency to think that the terms of trade will continue, generally, to be favourable to Britain. In the face of their present difficulties it is unlikely that exporters have any illusions in this respect. Besides renewal of German and Japanese competition, there is the fact that much of what Britain must export, especially in the engineering and allied industries, is capital goods, with the resultant growth of such industries overseas, and the hardening of the attitude on food prices of countries supplying food to Britain. Nevertheless, if British export prices can be kept low, and enough raw material be made available both for rearmament and for export production, there is no reason why our export industries, which have the inestimable advantage of skill and long experience, cannot continue to compete successfully. Increased productivity is necessary, which entails harder work in some industries; and the necessity for keeping prices to the minimum means that harder work in the shape of longer hours cannot in any sound concern occasion any increase in wages.

South African Railways & Harbours

THE report for the year ended March 31, 1951, of the South African Railways & Harbours, of which Mr. W. Heckroodt is General Manager, shows a significant rise in the volume of goods carried, 62,133,709 tons, compared with 58,671,684 in 1949-50. This tonnage was 60 per cent. more than in 1939-40, but during this period train and engine mileage increased only 35 per cent. Coal conveyed by rail totalled more than 23,000,000 tons, almost 40 per cent. of the total tonnage of all classes of traffic. There was a decrease of 5,611,052 in passenger traffic, although the figure of 250,164,799 passengers is still more than double that of the 1939-40 total.

In the table below are given particulars of traffic and financial results:—

	1949-50	1950-51
	Thousands	
Railways—		
Passenger journeys	255,776	250,165
Goods tonnage conveyed	57,941	61,482
Passenger train-miles	21,774	20,964
Mixed " " " " " " " "	6,005	6,072
Goods " " " " " " " "	55,448	56,624
Total	83,228	83,660
Total ton-miles	12,438,371	13,404,740
	£ thousands	
Passenger receipts	13,912	14,708
Parcels and mails receipts	2,277	3,678
Goods, coal and livestock receipts	58,014	69,095
Miscellaneous receipts	2,549	4,225
Total receipts	76,752	91,706
Working expenses	54,016	54,079
Depreciation	3,116	5,235
Total expenditure	57,132	59,314
Surplus	19,621	32,391
Interest and other charges (net)	24,038	25,201
Balance, railways	4,418	7,190
Harbours—		
Revenue	5,361	6,944
Expenditure	3,678	3,834
Steamships—		
Revenue	451	413
Expenditure	535	452
Airways and Airports—		
Revenue	3,538	3,678
Expenditure	3,554	4,007
Surplus on all services	2,835	9,931
Net revenue appropriations	461	1,461
Surplus on all services	3,296	8,470

Despite the rates increases made in September, 1946, and April, 1949, a temporary overall increase had to be applied from April 1, 1950, to offset the continually rising

expenditure. The increase, coupled with stringent economy measures, more efficient train operation, and a considerable increase in traffic, so improved the financial situation that revenue exceeded expenditure by £8,470,000, which is being divided between the betterment, renewals and rates equalisation fund.

To cope with the exceptional growth of traffic since the war, major improvement schemes totalling some £66,000,000 have been undertaken; of the amount more than £27,000,000 has been spent. In addition to the locomotives already acquired, tenders have been accepted from United Kingdom and Continental builders for 140 class "25," 25 class "GM" and 25 class "GO" locomotives.

Good progress was made with the first part of the new station at Johannesburg—the fourth on the same site in sixty years—and on a new depot at Prospect, covering some 400 acres and including a forwarding shed with a single concrete roof said to be the largest in the world. At the same time a central hump marshalling yard at Johannesburg was laid out; when operating fully it should have a capacity of some 5,000 wagons a day.

Electrification of two sections in the Reef area, totalling 57½ route miles, was approaching completion. Other important works were the new station and yard at Uitenhage, the new station at Burgersdorp, and the Grootvlei-Redan line. Numerous other schemes in hand or authorised during the year included doubling and quadrupling of busy sections, and many improvements and deviations. New coaches and wagons placed in service totalled 227 and 4,342 respectively. The open mileage at the end of the year was 13,346 miles, an increase of 17 miles. The length of lines electrified was 1,318 miles.

N.U.R. Intransigence

THE impression given by officials of the National Union of Railwaymen that, despite the great improvement in railway wages and conditions and the radical change in the economic position of wage earners generally in the past 30 years, they have "learnt nothing and forgotten nothing," is strengthened by the extravagant wording of an editorial in the February 15 issue of *The Railway Review*, the organ of the N.U.R. Reference is made to a "rallying call" from the N.U.R. at the prospect of another impending struggle. "This is not a fight we have chosen" it is stated, and "We have no choice but to meet the challenge. It is truly and starkly a battle for survival. In the brief period in which our enemies have been in power, there has been a transition from confidence to cold, hard doubt and apprehension." The foregoing might have been written in the industrially troubled years before 1914. There follows an allusion to the protective hand of the Labour Government, now withdrawn, and to "drastic inroads" recently made in the living standards of the working class.

All this is expressed in highly coloured language with a rich variety of metaphor. The occasion of the outburst seems simply to be the measures to preserve the national economy introduced by the present Chancellor of the Exchequer. Yet no single instance is given of any action by the Government which directly harms the interests of wage earners generally, let alone railway wage grades, apart from the relatively mild austerity resulting from Mr. Butler's emergency measures. The Conservative Government is accused of having begun a "campaign against reason, truth, and justice." It is not clear what is meant by a "struggle for survival." It is hard today to imagine how any Government in power could take measures which resulted in the worsening of the economic situation of the wage earner whilst favouring other sections of the community.

The existence of an economic crisis is not denied by *The Railway Review*, which admits that it would have developed even if Labour had returned to power. The crisis, it is said, would have been tackled by a Labour Government compelled to move towards "real Socialist planning," which alone can solve the problem.

The editorial suggests ways in which the N.U.R. can help the Labour movement to fight; they consist in the main of tightening up the N.U.R. organisation and recruitment.

The suggestion is made that union members bring pressure to bear on the non-union railwayman. "He must be ostracised" it is urged. "He must be constantly made to feel . . . an outcast. It is true that he who is not with us is against us and we must treat him as an enemy." This suggestion is nothing more than an appeal to class hatred, which if allowed to grow would result in the resurgence of class warfare.

Improving East African Transport

A CONFERENCE was held in Nairobi on February 11 and 12 to consider long-term and short-term proposals for improving transport facilities in East Africa, with particular reference to the port of Mombasa. The Chairman was Sir Reginald Robins, Commissioner for Transport in East Africa, and the conference was attended by the United States Consul-General, the Commissioner for East Africa in London, and representatives from the Ministry of Transport, United Kingdom-Continental-East Africa Conference, East Africa Conference, the East African Railways & Harbours, and two shipping lines.

There was a full review of the present situation, including consideration of memoranda submitted by interests concerned, and the proposals of the E.A.R. & H. Administration for transport development. The Conference noted the long-term proposals of the Administration, including major new works at the ports of Mombasa, Dar-es-Salaam, and Tanga, and the expansion of rail capacity by the provision of additional locomotives, rolling stock, and crossing stations and a large programme of track renewals and relaying. (These measures are estimated to cost some £25,000,000 and do not include new works now in hand and proposed—the 1952 programme is estimated to cost £8,000,000.) It strongly supported these proposals, which it deemed the minimum required to keep transport facilities in pace with developments in East Africa, and was pleased to learn that the Chairman of the High Commission, Sir Philip Mitchell, and the Commissioner for Transport, Sir Reginald Robins, were leaving immediately for London to discuss with the Secretary of State for the Colonies raising the capital finance to carry out immediately the minimum essential works and ensuring that the materials were made available.

It was considered that the present congestion at Mombasa was likely to persist until the capacity of the port and its services could be increased to cope with the volume of traffic to be handled. In the meantime, the volume of traffic through the ports of East Africa had to be so controlled, by the voluntary regulation by the shipping companies of the arrival of cargoes, that it always remained within the capacity of the transport services.

Delays in the passage of consignments through transit sheds were discussed. It was decided that the shipping companies should discontinue immediately the present practice of splitting bills of lading and that the Administration should accept only one delivery order against each bill of lading. It was reported that delivery of mechanical cargo-handling appliances was expected shortly, and the Conference strongly recommended that the port authorities, the handling contractors and the stevedores should pursue with energy the policy of mechanisation.

It was suggested that the Administration should investigate the whole working of lighterage in the port of Mombasa with a view to its use to the full extent in the loading of export cargoes to vessels lying in the stream. The Conference was satisfied that the track capacity of the E.A.R. & H. was ample to meet present requirements and could be readily and substantially increased, but noted that the rolling stock was only just sufficient to meet the present needs. It recommended that the Administration should take every possible step to secure a quicker turn-round of wagons up-country. Priority in berthing had to be accorded to passenger ships but it wished it to be placed on record that unless the heavy delays to ships and cargoes could be considerably reduced it was inevitable that the shipping companies would have to impose a surcharge on freights for East African ports.

World Railway Speeds

AN examination of current European railway timetables shows the very great progress made in recovering from the ravages of the war. It is to France that the major credit must go, for French main-line travel on the whole is far faster today than it was before the war, acceleration being attributable mainly to the considerable extension of electrification. In the summer of 1938, French runs booked at 60 m.p.h. from start to stop totalled 14,594 miles, and in 1939, as a result of drastic economy measures, it had come down to 10,527 miles; in the summer of 1951 the corresponding mileage had grown to no less than 17,194—11,959 miles with electric, 3,855 miles with diesel-electric, and 1,380 miles with steam power.

Attention centres chiefly on the newly-electrified main line of the South Eastern Region between Paris and Dijon, where a service is now operating which, relatively to distance and density, is unprecedented in European railway speed annals. Over this 195·3 miles 16 trains are booked non-stop daily in times ranging from 195 down to 152 min., the fastest at 77·1 m.p.h. start-to-stop with trains up to 600 tons in weight, and at a general average of 66·0 m.p.h. for the entire service. In addition, 17 trains cover the 99 miles between Dijon and Laroche in from 97 to 91 min., and 12 trains the 96·3 miles between Laroche and Paris in 96 to 92 min., including heavy sleeping car expresses made up to 800 tons. The fastest French schedule with diesel-electric traction is one of 69·9 m.p.h. by both the Basle-Paris railcar services from Chaumont to Troyes; and with steam the rubber-tyre Paris-Strasbourg *rapides* take the lead by covering the 157·6 miles from Paris to Bar-le-Duc non-stop in 145 min., at 65·2 m.p.h.

Another country in which a very great speed recovery has taken place, in view of the utter devastation of her railways during the war, is Italy, in which already three runs booked from start to stop at over 70 m.p.h. have reappeared. One electric *rapido* runs the 91·2 miles from Piacenza to Bologna in 74 min., at 73·9 m.p.h., and there are two 72 m.p.h. runs, one over the same stretch in the reverse direction in 76 min., and the other from Milan to Bologna, 135·6 miles, in 113 min. Italy can now show a total of 34 daily runs, totalling 1,893 miles, booked at 60 m.p.h. or over from start-to-stop. Even Germany has 15 runs within the 60 m.p.h. range, twelve of them (871 miles) with diesel-electric propulsion and three (184 miles) with steam. While this total of 1,055 is but a fraction of the German prewar 13,614 miles, and while in 1939 the German State Railways could list 33 daily runs (3,558 miles) booked at between 75 m.p.h. and 83·3 m.p.h., the present speed programme shows a most praiseworthy recovery. The fastest German run today is by a diesel streamline unit at 67·1 m.p.h.

Next in the list come Switzerland, with 21 daily mile-a-minute runs (647 miles); Sweden, 12 runs (444 miles); Denmark, ten runs (409 miles); and then Britain, six runs (265 miles). It is an unhappy commentary on current conditions to see Britain, once a leader in railway speed, so far down the list. The six runs are all over the ideal speed course of 44·1 miles from Darlington to York, North Eastern Region. Before the war, Britain could claim 730 miles of runs booked between stops at over 70 m.p.h., 4,580 miles at over 62 m.p.h., and 12,016 miles at over 60 m.p.h.; indeed, the former L.M.S.R. had established a mile-a-minute standard of running between stops on its main lines out of both Euston and St. Pancras, and, moreover, had encouraged the development of an exemplary standard of timekeeping with its "On Time" propaganda. Is the re-establishment of such standards, and the spirit of enterprise that made them possible, so completely out of the question today as is sometimes represented?

The best that is being done in Europe pales by comparison with present-day railway speed in the United States. The latest available figures show the unprecedented total on U.S.A. railways of 2,764 daily runs scheduled at over 60 m.p.h. from start to stop, aggregating 152,214 miles; of this total, 58,084 miles is booked at over 65 m.p.h., 16,665 miles at over 70 m.p.h., and 3,597 miles at over 75 m.p.h., with the fastest runs timed at 86·2 m.p.h. from

start-to-stop. These are with diesel-electric traction, which claims 112,653 miles of the total 60 m.p.h. mileage, as compared with 20,480 miles with electric and 19,081 miles with steam traction. By comparison the 23,407 miles of European mile-a-minute runs are divided up between 15,049 miles with electric power, 5,529 miles with diesel-electric, and 1,829 miles with steam. In the speed race, therefore, steam is now being left completely behind by its later rivals—diesel-electric traction in the United States and electric traction on the mainland of Europe.

Signalling for Tube Track Renewals

WERE anything wanted to show how far both ideas and practice have developed in signalling for underground electric lines, since the days when the adoption of outer homes as acceptance signals on the City & South London and Central London Railways was thought to represent a remarkable step forward in facilitating the running of a frequent tube train service, the paper read by Mr. W. Owen to the Institution of Railway Signal Engineers on January 9 would have met that requirement. His paper described a specially designed type of equipment based on the latest London Transport Executive practice and adapted to cover the situation arising when a general renewal of permanent way roadbed and track has to be carried out. Work of this kind is always difficult to effect in tunnels, but in the conditions ruling on tube lines it becomes particularly so, and suffers the further disadvantage of having to be done during a few hours each night.

The paper stressed the fact that a great deal of these tube tunnel tracks were originally laid some 40 years or more ago and a thorough renewal of the concrete underbed is now called for. This involves a somewhat involved process. Support of the track during the transitional period before the consolidation of the new foundation requires much care, and the imposition of a speed restriction is imperative. Any such restriction must have some disturbing effect on the train running, and the problem was to devise an arrangement which, while ensuring that any speed limit would be obeyed, would eliminate the need for the cancellation of trains. A detailed study of this problem was made, involving the use of time-distance curves and other aids to calculation, and it was found that if the length of track under reconditioning was kept to a certain figure the provision of some additional signalling, including a signal clearing only under a time control which would check positively that the speed of an approaching train had been brought within prescribed limits, would enable the traffic to be carried on satisfactorily without repercussions on other parts of the line. These had to be avoided as far as possible. A time control of a signal, normally at danger, had been applied already in more than one way on London underground lines, and very reliable designs of relay worked out for that purpose while the circuits called for in this latest application were not difficult to elaborate.

The interesting features of the apparatus which Mr. Owen described lay rather in its constructional details, which were so worked out as to allow it to be made up in sets in specially light containers, readily transportable and hung in position on simple attachments secured to the tunnel segment bolts, with cable connections and so on complete. Existing signalling, where this temporary apparatus is installed, is not interfered with, but for the time being is put out of use. The full-size set of apparatus which Mr. Owen demonstrated was studied with great interest and left his hearers much impressed with the amount of thought and care put into every part of it. The result of its adoption has been that this difficult track renewal work has been carried out on a number of sections without disturbing the normal train headway or even diminishing the service afforded to the public in rush-hours. Three complete sets of this equipment have been almost continuously in use since its first application in June, 1950, and work has been carried out with their aid at some 20 sites on the Bakerloo, Northern, and Piccadilly lines, invariably with complete success.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Russian Train Speeds

February 1

SIR,—It was with interest I read the extract from the Swiss journal *Die Weltwoche* on the decline of Russian railway speeds since 1913, appearing on page 124 of your February 1 issue.

On looking through my notes of a journey made in Russia in 1928 I find the timing of a special train I travelled by from Leningrad to Moscow was accomplished in a non-stop run (apart from changing engines almost exactly halfway, at Bologoie) in 11½ hr. This timing was 2 hr. quicker than the fastest scheduled passenger between the two cities at that period. Taking the mileage involved, equivalent to some 425 English miles, it is obvious the Russian railway administration does not even at the present time encourage reasonable speeds on the dead straight line between the two principal cities, with practically no gradients and traffic density comparatively small.

On this side of the Iron Curtain the one country which might show comparable decelerations to the Russian timings is Spain. Is it possible for your valued organ to publish some similar comparative speeds not only for Spain but other European countries?

Yours faithfully,

GERALD LEEDAM

Gorst Hills Cottage, Little Sutton, Cheshire

[Elsewhere in this issue we publish a table comparing services on a number of European main lines in 1913 and 1951.—Ed., R.G.]

Reversing Gear Design

January 22

SIR,—As considerable interest has been shown in the design of reversing gear on the new British standard locomotives I enclose photographs of a similar remote control gear designed and applied locally to the "806" class 2-8-2 locomotives of the Nigerian Railway in 1943. The interest lies in the fact that in a recent paper read before the Institution of Locomotive Engineers a similar type of remote control was described and illustrated, and I think it should be realised that British Railways were not the first to think of such a thing.

The original design provided steam reversing which was found difficult to maintain, so it was decided to convert to hand operation with the minimum of alteration. As an experiment, two right-angle brackets were placed in the positions previously occupied by the centres of the steam and catract cylinders. The original combined piston rod and buckle was retained as a guide, and the reversing nut welded to the top of the buckle. The reversing screw was

mounted in ball bearings above the guide. The whole gear was balanced by weighted arms welded to the reversing shaft crank bosses to allow operation through a simple handwheel, without a gearbox, mounted on a light bracket attached to the cab side. Two metal tubes with a series of universal joints coupled the handwheel to the reversing screw. The original indicating gear remained untouched.

The experiment proved so successful that no further alterations have been necessary. Mr. G. Hodge, Research Officer of the Nigerian Railway, was responsible for the design and application.

Yours faithfully,

T. B. WELCH

Chief Mechanical Engineer

Nigerian Railway, Ebute Metta, Nigeria

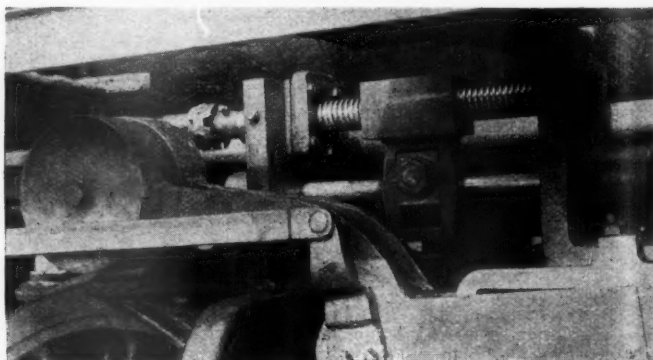
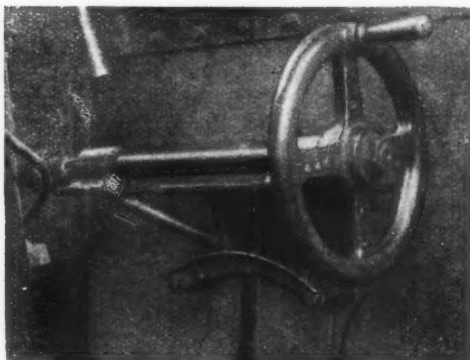
Missed Connections

February 21

SIR,—Yesterday I was a passenger by the 9.18 a.m. "White Rose" from Kings Cross, intending to travel by it to York, changing at Doncaster. We were stopped early in the run because a door was allegedly open (though no such door was found), and ran poorly to Peterborough, but the climax was the breakdown of our "A4" Pacific at Helpston, where we stood on the main line 35 min. awaiting another engine. This was a "V2" 2-6-2, which struggled on with the 16-coach train and brought us into Doncaster 70 min. late, with the York connection long since gone.

There were a dozen or so York passengers, and some of us repaired at once to the inspector's office on the down side, which was manned, apparently, by a ticket collector, no platform inspector being visible. In view of what had happened, I asked that the 10.5 a.m. express from Kings Cross to Glasgow might be stopped to take us on to York; nearly 15 min. was available before this train could reach Doncaster, but I was told that nothing of the kind could be done without authorisation from London, 156 miles away! We therefore had the mortification of seeing the Glasgow train brought almost to a stand by an adverse signal on the centre road, with nothing between us and it but the completely empty No. 3 platform, but unable to join it.

In view of the signal slowing, a stop would have cost the Glasgow train two or three minutes at most, and would have enabled the stranded passengers to reach York a little less than 1 hr. late, with the feeling that British Railways had done the best they could for them in difficult circumstances. As it was, they were condemned to a wait of over 1½ hr. at Doncaster, and to reach York at least 2½ hr. late, and the comments of some of these passengers were bitter in the extreme.



Hand-worked reversing gear on Nigerian Railway 2-8-2 locomotive, showing (left) handwheel by cab side, and (right) close-up of mechanism

I was due to lecture at a public school near York—ironically enough, on modern railway speeds and facilities!—and having wired to the school my inability to keep the appointment and why, had to return to London with a day's time and expenses wasted. A lady on the train was due to conduct an examination at West Hartlepool, and equally was prevented. Both of us could have reached our appointments no more than a few minutes late with the simple assistance of the stoppage of the Glasgow train.

I have described this incident in detail in an attempt to stress the failure of modern over-centralisation in dealing with urgent local situations of such a kind as this, and the loss of public goodwill suffered by British Railways in consequence.

Yours faithfully,

CECIL J. ALLEN

70, Rowlands Avenue, Hatch End

Subsidised Airway Competition

February 20

SIR,—The timely editorial article in your February 15 issue does not mention the cost to the taxpayer of running the aerodromes, for which the last figure given was £2,300,000. This does not include interest on the capital required for their construction. The recently imposed tax on passengers landing would not appear to go far towards defraying these costs.

Yours faithfully,

R. G. R. CALVERT

10, Bolton Avenue, Windsor

Claims Prevention Measures

February 18

SIR,—I think that other readers will be interested to see the calculations which result in the figure of 99.93 per cent. or, alternatively, the figure of 9,993, which presumably was intended to be quoted, which was given in the editorial note in your February 15 issue.

Yours faithfully,

NORMAN CLARK

"Gwylfa," Higher Lane, Langland, Swansea

Economics of Diesel Traction

February 18

SIR,—I should certainly not admit to being one of those who consider diesel traction the panacea for all ills, but nevertheless I must contest the conclusions in the editorial note "Economics of Diesel Traction" in your February 8 issue.

Before attempting to draw conclusions from the capital costs you quote, it would be as well to look into their background. It is certainly not reasonable to compare the railways works cost of a steam locomotive with that of a diesel which is largely bought out, bearing in mind that in the price of the steam locomotive there is no element of profit or allowance for breaks in construction nor of development charge, but in that of the diesel there must be if the supplier is to survive. Making allowance also for the different scale of production and the fact that railway works are not experienced in building diesels, it seems much more likely that the true ratio of cost for the two types is about £30,000 to £70,000 for similar nominal power provided in similar conditions.

A reasonable average annual mileage for a diesel would be 200,000 in mixed traffic service, and the saving in fuel alone per mile would be about 6d., judging from recently published figures, giving an annual saving of about £2,500. This coupled with the fact that the total stock of diesels would need to be two-thirds or less than that of steam locomotives and that many fewer shops and other facilities would be needed to keep them running, makes the picture look rather different. It suggests that there is scope for the building of quite a large number of diesels immediately for main-line work.

The 30 years life for the diesel is a true life, with most of the original locomotive still there, but the original steam locomotive is represented after 30 to 40 years as a rule only by the wheel centres, if that; the boiler, frames, cylinders and motion have been replaced probably more than once.

Yours faithfully,

T. R. HUME

62, Long Elmes, Harrow Weald

Royal Funeral Train Locomotive

February 22

SIR,—I refer to your editorial note "Much Ado About Nothing" in today's issue, and, while agreeing that it does not seem to be of particular importance what engine was booked to work the Royal Funeral train, provided such engine was in first class condition, I was horrified to see the photograph on page 213 of the same issue.

Here we see another example of what appears to be defective maintenance, and, by "another example" I mean that a large number of photographs of moving trains seen these days depict the same—the presence of clouds of steam at places where steam should not be seen. What appears to be a defective joint is allowing waste steam to exude from both sides of the front end, and it completely spoils Mr. Earley's otherwise excellent photograph, to say nothing of the reputation of the railways of Britain to be relied on to turn out efficient and steam-tight locomotives for occasions such as this.

Although I agree that this steam leak would do practically nothing to affect the haulage capacity of the locomotive, it is a little point which causes considerable irritation to the adherents to steam traction.

The writer has been responsible, on several occasions, for turning out locomotives booked to haul Royal and other important special trains, and would have expected something more than criticism if such locomotives had been seen in a cloud of steam such as ersatz No. 4082. The defect did not develop on the journey because the same cloud is seen in another photograph of the train leaving Paddington.

Yours faithfully,

C. M. E.

February 23

SIR,—It is with regret that I must emphatically disagree with the editorial note "Much Ado About Nothing" in your February 22 issue.

I contend that an important principle is involved. In view of the critical state of the late King's health, it became obvious that locomotive No. 4082 might shortly be required. Steps should have been taken to ensure that it was in good running order. Apparently no action was taken until two days before it had to be taken. To cover the fact that No. 4082 required more attention in the works than could be completed by the date of the funeral, another locomotive, No. 7013, was therefore selected to which all plates (including that indicating that King George V had driven No. 4082) were transferred. No doubt it was the Western Region authorities' earnest hope to pretend that No. 7013 was in fact No. 4082. As apparently there is much more interest in railways outside the service than within, the detail differences were, of course, noted. The consequent publicity of dubious value reflected not a little discredit to the integrity of the administration of our railway system.

The time is coming when, as an outstanding class of locomotives, a "Castle" must be preserved. What better machine would be No. 4082, one of the original batch, which was driven by King George V at Swindon, and hauled the funeral train containing his body to Windsor? If only more preparedness had been shown so that No. 4082 could also have been used on February 15, this locomotive could have become unique in the annals of British railway history.

Yours truly,

A. C. SMITH

25, Talbot Road, Bristol, 4

THE SCRAP HEAP

Insult to Injury

A correspondent writes that he has received a circular inviting him to go by motorcoach from London to Weymouth to see the last of the Weymouth-Portland-Easton line before the passenger service is withdrawn.

Reduced Fares to Seaside Resorts

Publicity directors of five leading seaside towns will meet the Railway Executive soon to urge cheaper fares in the non-peak holiday periods and the reintroduction of eight- and fifteen-day tickets. The Executive will also be asked to issue family tickets.—*From the "Daily Mail."*

Hippopotamus on Line

The driver of a main-line night train at Hunyani, near Salisbury, Rhodesia, saw a hippopotamus on the line in the light of the locomotive's spotlight. The hippopotamus refused to leave the track in spite of repeated whistling and letting off steam, and trotted ahead of the train for a long way before it conceded the right of way.—*From "The Times."*

A West Midland Centenary

The Battle of the Gauges is recalled by the centenary of the opening of the Oxford, Worcester & Wolverhampton Railway from Worcester to Droitwich on February 18, 1852. Some ten weeks later, on May 1, the railway was extended from Droitwich to Stourbridge, and from Norton Junction (near Worcester) to Evesham.

The Great Western Railway made an agreement, in September, 1844, to assist the promoters of the O.W.W.R. in the construction of a broad-gauge line from Oxford to the manufacturing districts of South Staffordshire, but the London & Birmingham Railway regarded this as an invasion of its terri-

tory, and projected a standard-gauge line from Tring to Wolverhampton, passing through Banbury, Evesham, and Worcester.

The rival scheme was defeated after a fierce parliamentary contest, and the O.W.W.R. was authorised on August 4, 1845. Serious financial difficulties delayed the construction of the railway, and necessitated the provision of motive power by a contractor until 1856. Four years later, the O.W.W.R. was amalgamated with the Worcester & Hereford, and the Newport, Abergavenny & Hereford Railways as the West Midland Railway. This merger was followed by amalgamation of the West Midland with the Great Western Railway as from August 1, 1863.

The "Thirty-Nine Stops"

During the hearing of an application for a licence to run an express bus service from Glasgow to Thurso, via Inverness, it was stated that the train journey between Thurso and Inverness was referred to as the "39 stops." A witness said that there were between 35 and 40 stops on the journey, which the train covered at an average speed of 11 m.p.h.

[The current Scottish Region timetable shows the best timing between Thurso and Inverness to be 5 hr. 50 min. for the 153½ miles, by the 3.40 p.m. train from Thurso, which makes 35 stops, of which 14 are conditional. The average speed is thus approximately 26 m.p.h. In the northbound direction, the best time is 5 min. longer, with 28 regular and three conditional stops.—Ed., R.G.]

Pioneer Hunslet Diesel

The accompanying illustration shows a Hunslet diesel shunting locomotive at work on the oil wharves at Thames Haven. Introduced in 1932, it was the first standard-gauge diesel built by the firm and worked until after the war on

the L.M.S.R. as No. 7051. The locomotive still has the original Hunslet gearbox but the former M.A.N. engine has been replaced by a McLaren engine.

Rhapsody

Spring Song of a Peevish Parcel Porter

Spring is somewhere round the corner,
Something's breaking through the crust
Of my petrified affections,
I must laugh and sing or bust!

Long I gloried in my toughness,
Long I measured my success
By the way I made the public
Suffer from my crankiness.

Now a mild and merry madness
Has replaced asperity,
And an animated sparkle
Lights the ancient, fish-like eye.

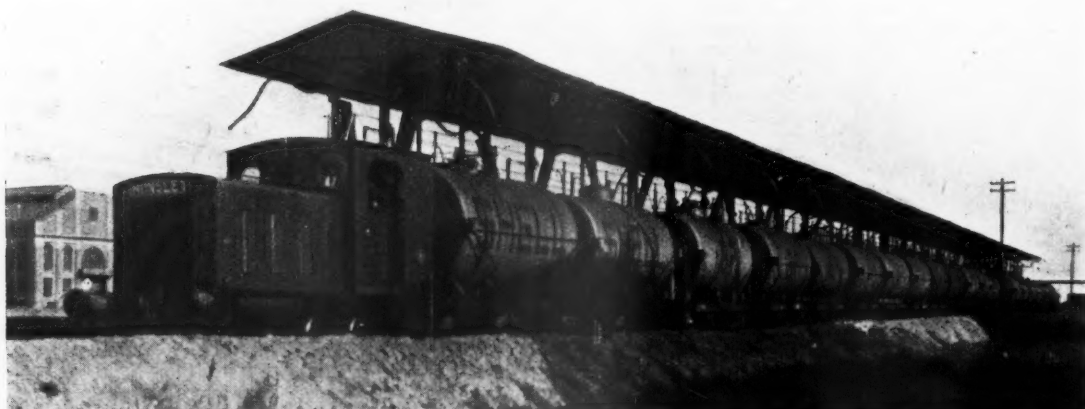
"That's right, Lady, bring the pram in,
"Stick in anywhere you like;
"Yes, Sir, only too delighted
"To look after your old bike."

"So you've lost your umbrella—
"Think you've left it in the train?
"Never mind, take this—'twill do me
"Good to walk home in the rain."

"Dump your fish and trees right here,
boys,
"Cover up my nice, clean floor,
"Never mind if other people
"Can't get through the jolly door."

Bless all little "Ledger Labels,"
Spring is just around the bend,
Me, too, maybe—why, I'd almost
Called the Stationmaster "friend"!

A. B.



Hunslet diesel shunting locomotive, built in 1932, at work at Thames Haven

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

NEW ZEALAND

Large Increase in Fares

Almost all fares are to be increased by 15 per cent. on March 2. The increases have been announced by the Minister of Railways, who said that they had been deferred so that the travelling public would have the advantage of the lower fares during the Christmas and New Year holidays. No advance has been made in the charge for reservations or for sleeping berths. Some increases are also made in charges on railway road services, chiefly on service cars.

Transfer of Staff

In an endeavour to rectify shortage of staff at workshops, the railways are transferring trained men from the Hill-side Workshops, Dunedin, to the shops at Woburn, Wellington. The Woburn shops are very short of skilled labour and it is urgently necessary to bring the establishment nearer to full strength.

Members of Royal Commission

Sir John Allum, Mayor of Auckland, has been appointed Chairman of the Royal Commission which is to investigate all aspects of the railway services. The other members of the Commission are Mr. C. V. Smith, Chairman of Cadbury, Fry, Hudson, Limited, Dunedin, and Mr. W. O. Gibb, Managing Director and General Manager of the F.A.M.E. Insurance Company, Wellington.

The order of reference for the Commission has been sent to the chairman and members, but it will not be published until they have commented on it. It is stated that the Commission will start to hear evidence at an early date.

EAST AFRICA

Estimates for 1952

During the recent meeting of the Central Legislative Assembly in Nairobi, Sir Reginald Robins, Commissioner for Transport in East Africa, when moving that the draft estimates of the Railways & Harbours Administration for this year be adopted, outlined the difficulties facing the Administration during the next few years. Development in the three territories was rapidly outstripping transport facilities but might have to be slowed if the situation could not be alleviated speedily and effectively.

Such conditions faced other colonies and countries, Sir Reginald Robins said, and it seemed to him that rearmament and colonial transport needs could not be met at the same time. Raw materials and manpower should be set aside for the Colonies by the United Kingdom if development was not to be stifled.

Sir Reginald Robins referred to the discovery of coal in the Southern Province of Tanganyika and suggested that the possibility of converting it into other fuels, such as oil, might be considered.

In 1947 the Administration had realised that port facilities at Mombasa were insufficient, and since then much had been done.

Revenue was estimated at £12,000,000, £1,250,000 more than last year. There was an increase of £763,000 in working expenditure. Harbours had an estimated revenue of £1,800,000, an increase of £100,000. Expenditure was estimated to be increased by £106,000. The causes for increased expenditure were well known; there were rising prices everywhere. In less than one year it had been necessary to allow an additional £540,000 for relaying the Nakuru-Kisumu line.

"If one looks around East Africa there seems to be no sign whatever of austerity," he said. There was an ever-increasing demand in local traffic as well as import and export traffic. The estimates had been based on an increase of 100,000 tons in the import trade. That figure might be an underestimate.

CANADA

Higher Freight Rates Forecast

The possibility of a new application for higher freight rates by the railways was seen in a comment by Mr. Donald Gordon, President of the Canadian National Railways. In an interview Mr. Gordon discussed the general railway situation and noted that material, labour and other costs were still rising and that there was no other way in which they could obtain revenue.

C.N.R. as Road Haulier

A suggestion that the Canadian National Railways may undertake road

haulage has been made by Mr. Donald Gordon, the President. He admitted that private road hauliers were causing the railways much concern by cutting into much of their best revenue. The C.N.R. was studying the road haulage industry for the best routes and areas. "Where it is economically feasible we will go into the business for ourselves," Mr. Gordon said.

UNITED STATES

Pennsylvania Wagon Orders

The Pennsylvania Railroad has received the last of an order for 1,200 high-side gondola cars, of 70 tons capacity, built by the American Car & Foundry Company. This order closely follows another for a similar type, making a total of 2,000 delivered by the company to the Pennsylvania during 1951.

The wagons are of all-welded construction with fixed ends and wood floors, and sides of the fish-belly type with straight centre sill. Each is 52 ft. 6 in. long and weighs 27 tons empty.

ARGENTINA

Buenos Aires Underground

Buenos Aires Transport, the successor of the Buenos Aires Transport Corporation, is to carry out improvements on the underground railways. They include improved ventilation on some routes, a number of subway connections between stations on different lines, and better access facilities at some of the more important stations. A con-

Main-Line Working in Nigeria



Down "Plateau Limited" at Jebba, Nigerian Railway, hauled by "River" class locomotive No. 117, "River Galma"

Photo]

[T. B. Welch

necting link will be built at Plaza Mayo between the Caballito (former Anglo-Argentine) and Palermo (former Chadopyf) lines, thus allowing all repairs to former Chadopyf stock to be carried out at the Polvorin shops of the former Anglo-Argentine line instead of Plaza Constitución, where the space occupied by the shops is needed for passenger facilities. The former Lacroze stock, which uses the third-rail system in contrast to the overhead system used on all other lines, will continue to be repaired in the Lacroze Shops.

IRELAND

Interim Aid to G.N.R.(I.)

Supplementary estimates presented to the Northern Ireland Parliament last week included a vote for the sum of £299,000 as an additional provision for grants to the G.N.R.(I.) to enable the company to continue existing services. The proposed vote will bring up the amount of aid from the Northern Ireland Government to £300,000, as originally promised.

The Dail, has also passed a supplementary estimate of £118,000 to meet the company's operating losses. The Minister for Industry & Commerce of the Republic stated that lists of necessary expenditure on equipment and material had been submitted to both Governments and approved, and borrowings up to £125,000 had been guaranteed for these purposes. Because of the difficulty of obtaining deliveries, not more than £21,000 had been drawn from its special account opened on part of that guarantee.

The Minister added that it had been agreed between the two Governments that the losses should be met in the proportion of 60 per cent. by the Belfast Government and 40 per cent. by the Dublin Government. There would be an adjustment in favour of the latter if there were profits from the company's road services, which were operated entirely in the Republic, and also from receipts—attributable to increases in rates and fares on the Southern portion of the line.

The amount due to be paid to the company for running losses and for materials and equipment from January, 1951, to March, 1952, was estimated at £117,466.

Legislation to give effect to the purchase of the company by the two Governments is in course of preparation and the Minister said that he would try to have it passed by his Government before the summer recess.

GERMANY

Jubilee of Berlin Elevated

On February 16, 1902, the first section of the Berlin Elevated & Underground Railways—now known for short as U-Bahn, and part of the Berlin Transport Undertaking (Berliner Verkehrs Betriebe)—was opened between Stralauer Tor and Potsdamer Platz. During the same year, the line was extended from Gleisdreieck to Zoologischer Garten and Knie, and from Stralauer Tor to Warschauer Brücke.

The first plans for electric urban railways in Berlin were worked out by Werner von Siemens as early as 1880. The line was built by Siemens & Halske

A.G. for the Hochbahngesellschaft, founded in 1897. Steel viaducts were used wherever adequate street width was available. The remaining sections were built as cut-and-cover lines, a method which was followed with the subsequent lines. The present extensive network comprises five lines, three with branches.

The fiftieth anniversary was celebrated on March 18, in the presence of representatives of urban railway undertakings of other countries. A special train was worked over the oldest section, and a ceremonial meeting took place in the Schiller Theatre, Charlottenburg.

FRANCE

"European" Covered Wagon

A study was undertaken by the Office of Research & Trials (O.R.E.) of the International Union of Railways technical research station at Utrecht, to devise designs of standard wagons acceptable to all European railway administrations. The construction of a prototype covered wagon was entrusted to the Tergnier Workshops of the S.N.C.F.

The stages were completed in record time. The all-welded body was begun on June 14, 1951, and completed on June 27. After bench tests at Vitry, the body was returned to Tergnier and further construction work was begun on August 23. The co-operation of other S.N.C.F. workshops had to be enlisted in the manufacture of the 355 types of piece required, but despite the difficulties involved in putting together a completely new type of wagon, the final stages were completed on October 8.

Publications Received

Post Office 1951. London: H.M. Stationery Office. 9½ in. × 7½ in. 64 pp. Illustrated. Price 3s.—This review of the year's activities of the Post Office comprises articles on the various telecommunication, remittance, and postal facilities, including the Army Postal Services, and aspects of P.O. staff questions. The half-tone illustrations depict *inter alia* the London Post Office Railways and some mechanical handling methods used. Some interesting statistical information is given.

The Axminster & Lyme Regis Light Railway. With Complementary Road Passenger Services. By Lewis Cozens. Obtainable (by post only) from the Compiler, 25, Cholmeley Crescent, Highgate, London, N.6. 8½ in. × 5½ in. 44 pp. Illustrated. Paper covers. Price 5s. 3d.—The standard-gauge light railway which connects Lyme Regis with the Southern Region West of England main line at Axminster was opened on August 24, 1903. It is remarkable for its steep gradients, sharp curves, and picturesque surroundings. Mr. Cozens has described the history, chief features and operation of this fasci-

inating line in detail, and has outlined the abortive schemes for railways to Lyme Regis which preceded its construction. Separate sections are devoted to the locomotives and complementary bus services, both of which are of considerable interest. The illustrations include two views of trains at Lyme Regis Station on the opening day, recent scenes on the line, and dimensioned diagrams of the Adams 4-4-2 tank engines which now have a monopoly of the traffic.

G.N.R.(I.) Road and Rail Tours.—Tours from Dublin and other centres by bus, and combined train and bus tours during the summer are listed in a new G.N.R.(I.) publication. Examples range from a 5s. bus tour of Dublin and the seaside resorts north of the city to a 14s. excursion through Donegal, based on Bundoran.

Resistance Thermometer Controller.—The operating principle of the firm's type RT.2 resistance thermometer controller is contained in an illustrated leaflet RT.13A, published by Sunvic Controls Limited. A feature of its design is that it makes furnace temperatures substantially independent of mains voltage variations. Furthermore, it

covers a range of temperatures from 30° C. to 1,140° C. in six steps, available by change in position of soldered links. Included in the leaflet is a circuit diagram together with the general specification, voltage supply, load and range; the latter are given in table form.

Centrifugal Pumps.—An illustrated booklet has been published by Saunders Valve Co. Ltd. giving the principal features of Safran centrifugal pumps. Types available include belt-driven and direct-coupled pumps, petrol or diesel driven, bulkhead and mobile units, and also twin sets. Ranges, sizes, capacity and other relevant information are tabulated.

Festival of Britain.—From the Dunlop Rubber Co. Ltd., we have received a commemorative volume produced by Dunlop and its associated companies as a photographic record of the contributions which they made to the Festival of Britain. At the South Bank site alone there were more than 30 separate Dunlop contracts and exhibits, and the scope and extent of them are well brought out in the illustrations in this publication.

First British Main-Line Freight Electrification—4*

*Power, auxiliary and regeneration circuits of
Metrovick equipment in mixed-traffic locomotives*

THE Bo + Bo locomotives are equipped with four traction motors of the axle hung, nose-suspended, series wound, force ventilated type. An unusually wide range of field weakening is provided to cater in one type of locomotive for the variety of traffic which these locomotives must eventually handle, from the heaviest mineral trains of 750 tons with one locomotive (850 tons assisted), to all classes of goods train with unbraked, partially braked, and fully braked stock, to both stopping and express passenger trains. Maximum locomotive availability is thus achieved, a specially important consideration on comparatively short mileage electrifications such as this. The wide range of economical tractive effort and speed is indicated by the curves in Fig. 1.

The total locomotive horse-power in the weakest field is 1,868, and this is given at a speed of 45 m.p.h. at 1,400 line volts. The two motors in each bogie are permanently connected in series. The ventilating air is supplied by two blowers driven from the two motor-generator sets in the body; the air is drawn in through filters in the locomotive body.

Single reduction spur gearing is used for driving the road wheels; the rim and the centre of the gear wheels are made in separate parts. On some of the locomotives these parts are connected by a system of helical springs; on others rubber resilient pads transmit the drive.

Electro-Pneumatic Contactors

Power to the traction motors is controlled by the electro-pneumatic contactors, in the manner shown by reference to the power diagram and sequence chart (Figs. 2 and 3). The contactors, with reversers and other high-tension apparatus, are mounted in a special compartment interlocked to prevent access except when the pantograph is lowered. The starting resistances are also housed in another compartment, and have substantial rating to deal with heavy, slow accelerations when required, and also slow running in fog conditions. These resistances are cooled by natural ventilation.

The long, heavy gradients over the Pennines, a feature of this line, make the provision of regeneration a wise choice. For this purpose during regeneration one of the two motor-generator sets supplies separate excitation of the traction motor series fields.

Each driving cab is equipped with identical apparatus. The master controller has four controls—a removable "forward" and "reverse" key, a motor combination lever for "series" or "parallel" connection of motors, an accelerating lever, and a regeneration lever for varying the amount of regeneration by variation of the traction

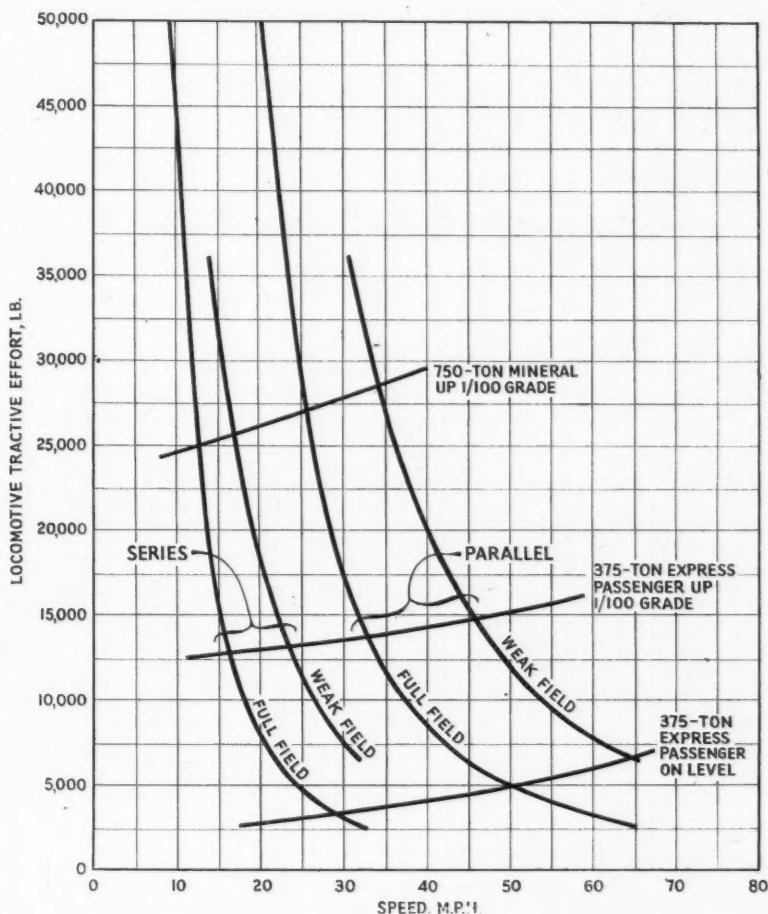


Fig. 1—Locomotive performance at 1,400 volts

motor field excitation. The number of notches provided are shown in Figs. 2 and 3; the rate of notching is entirely in the hands of the driver. Regeneration is provided down to a speed of 16 m.p.h. Below this speed regenerative braking ceases to function, and the normal air brake is used. If regeneration should unexpectedly fail, the air brake is automatically applied.

The low-tension supply for control, lighting and other auxiliary circuits is obtained from one of the motor-generator sets mentioned above. This set has an output of 5 kW. at 50 volts. An alkaline battery of 33 cells floats across the generator and can feed the low-tension circuits if there is a failure of the motor generator set. The other motor generator set, which supplies the traction motor excitation during regeneration, is rated at 35 kW. at a variable voltage up to 45 volts.

These two motor generator sets are

accommodated in the auxiliary machine compartments, with a motor-driven compressor and an exhaustor. The compressor, which is of the two-cylinder reciprocating type, supplies air for operating the locomotive brakes, the electro-pneumatic control apparatus, pantograph, horn sanders, and window wiper.

The exhaustor has four cylinders for operating the brakes of vacuum-fitted trains, and is arranged for two-speed operation; the higher speed is used for releasing the brakes.

In addition to the master controller, each cab contains an air brake valve for controlling the straight air brakes, a vacuum brake valve for operating the vacuum brakes on the train, and controlling the exhaustor speed (this valve also controls the locomotive air brakes through a proportional valve), a control key switch and other switches for resetting the overload, overvoltage and

* Parts 1, 2 and 3 appeared in our issues of February 8, 15 and 22

Proportions of British Standard Locomotives

Dimensions and proportions of new standard locomotives for British Railways compared with former designs built by the four main-line railways

By E. C. Poultney, O.B.E., M.I.Loco.E.

THE recent completion at Crewe Works, British Railways, of the first of the light standard Pacific locomotives makes it possible to review the dimensional characteristics of the four new main-line tender engines and make a comparison with similar types built by the former main-line companies. The four new standard locomotives now designed and built under the direction of Mr. R. A. Riddles, Member for

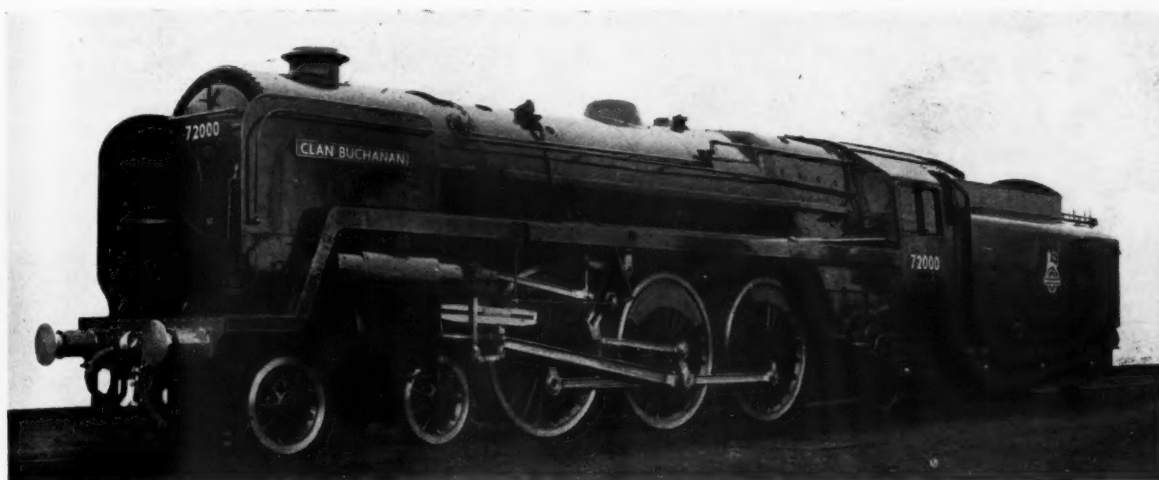
Mechanical & Electrical Engineering, Railway Executive, are as follows:—

Class	Type	Rated tractive force
"7"	4-6-2	32,150 lb.
"6"	4-6-2	27,520 "
"5"	4-6-0	26,150 "
"4"	4-6-0	25,100 "

The accompanying table has been prepared to give the leading dimensions of the four standard locomotives and the important ratios. The table has, for

comparison, been drawn up in the same manner as those included in a series of illustrated articles entitled "Proportions of British Locomotives" in our August 18 and 25, 1950, issues.

The principal new designs are the two Pacific type engines, classes "7" and "6," which are generally similar in constructional details and represent designs which may be expected to be well suited for main-line passenger working, the



Standard class "6" locomotive for passenger and fast freight trains



Class "7" Pacific locomotive, "Britannia," introduced in 1951

BRITISH LOCOMOTIVES—COMPARISON OF PRINCIPAL DIMENSIONS

Weight (lb.)	Adhesive weight (lb.)	Cylinders No. × stroke (in.)	Driving wheels dia. (in.)	Steam pressure lb. per sq. in.	Rated tractive force (lb.)	Evaporative heating surface (sq. ft.)	Superheater surface (sq. ft.)	Total heating surface (sq. ft.)	Grate area (sq. ft.)	Firebox heating surface per cent. of evaporative	Superheater surface per cent. of total	Adhesive factor	R.T.F. ÷ exp. heating surface	R.T.F. × dia. of drivers ÷ evap. heating surface	R.T.F. ÷ grate area	Total heating surface ÷ grate area	Class
4-6-2																	
210,560	136,080	(2) 20 × 28	74	250	32,150	2,474	718	3,192	42	8.5	22.5	4.23	13	962	765	76	Standard class "7"
198,240	126,336	(2) 19½ × 28	74	225	27,520	2,073	628	2,701	36	9.4	23.2	4.59	13.2	976	763	75.4	Standard class "6"
192,640	123,760	(3) 16½ × 24	74	280	31,000	2,122	545	2,667	38.25	11.9	20.4	3.99	14.5	1,073	812	69.8	"West Country," Southern Railway
2-6-2																	
208,544	146,944	(3) 18½ × 26	74	220	33,930	2,431	679.6	3,110.7	41.25	8.84	21.8	4.36	13.9	1,000	817	75.3	Class "V2," L.N.E.R.
185,920	141,120	(3) 18 × 28	75	220	33,930	2,465	400	2,865	40	9.4	13.95	4.16	13.7	1,026	848	71.6	Proposed, Southern Railway
4-6-0																	
185,920	136,800	(3) 18 × 26	81	250	33,150	1,864	348	2,210	31.25	10.43	15.75	4.12	17.7	1,433	1,060	70.7	"Royal Scot," L.M.S.R. (converted)
178,864	131,824	(4) 16 × 26	80½	225	31,625	2,018	262.6	2,280	29.36	8.13	11.5	4.16	15.7	1,263	1,080	77.7	"Castle" class, G.W.R.
170,240	130,032	(3) 19 × 28	74	225	26,120	1,650	369	2,019	28.65	10.35	18.25	4.97	15.8	1,179	910	70.5	Standard class "5," L.M.S.R.
161,504	121,510	(3) 18½ × 28	72	225	25,455	1,650	348	1,998	28.65	10.35	17.4	4.77	15	1,108	889	69.7	Class "5," L.M.S.R.
159,376	117,600	(2) 20 × 26	74	225	26,876	1,676	344	2,020	27.9	10.01	17	4.37	16	1,185	963	72.5	Class "B1," L.N.E.R.
168,000	126,560	(2) 18½ × 30	72	225	27,275	1,841.3	262.6	2,104	27.07	8.4	12.45	4.63	14.8	1,065	1,001	77.7	"Hall" class, G.W.R.
179,088	131,714	(2) 21 × 28	72	180	26,200	1,878	337	2,215	30	8.6	15.22	5.05	13.9	1,000	875	72.8	Class "H15," Southern Railway
152,096	115,472	(2) 18 × 28	68	225	25,100	1,444	265	1,709	26.7	9.9	15.5	4.6	17.3	1,176	940	64.5	Standard class "4"

"Castle" and "Hall" classes. G.W.R. Superheater surface. Original Swindon superheater

class "7" for the heavier traffic requiring high-speed operation, and the small class "6" for handling passenger services over heavily-graded sections at medium speeds. Further, when main-line freight trains are equipped with a continuous brake, the light Pacific class "6" engines may be expected to be invaluable for expeditiously working long-distance, through freight-traffic, at relatively high sustained speeds.

Three New Designs

The new standard locomotives embrace three new designs, and one which is for all practical purposes, a modification only of a previous well-known class. The new engines are the two 4-6-2 types, and the one 4-6-0 class "4," the smallest engine of modern design, of this particular type so far built for a British railway. The larger engines of the Pacific type, power class "7," are understood to have been built to work passenger traffic similar to that now operated by the former L.M.S.R. locomotives of the three-cylinder "Royal Scot" class, and the four-cylinder "Castle" class engines of the former G.W.R.

The dimensions of both these 4-6-0 designs are included in the table. The differences seen between 4-6-2 and 4-6-0 type locomotives of much the same rated tractive force bring out the far greater boiler capacity of the 4-6-2 design in relation to the tractive force when compared with the 4-6-0 types.

The new class "7" engines are more comparable with the class "V2" 2-6-2 three-cylinder engines of the former L.N.E.R. The dimensions of these are given in the table, and for further interest particulars are included of a similar design of locomotive, also with three cylinders, designed by R. E. L. Maunsell for service on the Southern Railway, but not built. The weights given are therefore estimated.

Turning to the class "6" Pacific engines, it will be noted that, from the point of view of rated tractive force, this class is not greatly different from the 4-6-0 general-purpose locomotives, standard class "5," but, here again, boiler capacity has by virtue of the Pacific wheel arrangement been greatly augmented in relation to the potential cylinder power. The only previous locomotives with which any comparison can be drawn are the Bulleid "West Country" class of the Southern Railway. Here, again, the relatively greater boiler power of the standard class "6" is clearly evident.

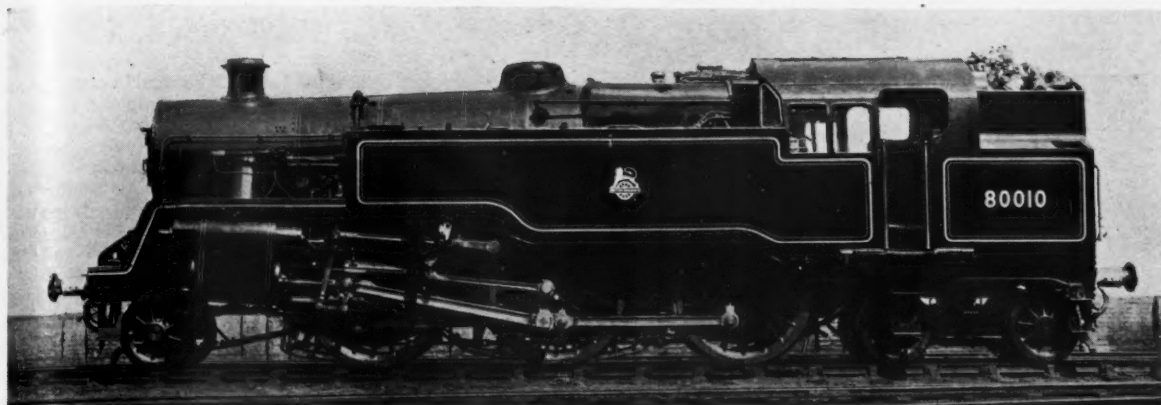
Considering the two new Pacifics together, the striking features brought out are the closely similar boiler factors B and BD. They are:—

Class "7" ... B.13 BD. 962
"6" ... B.13.2 BD. 976

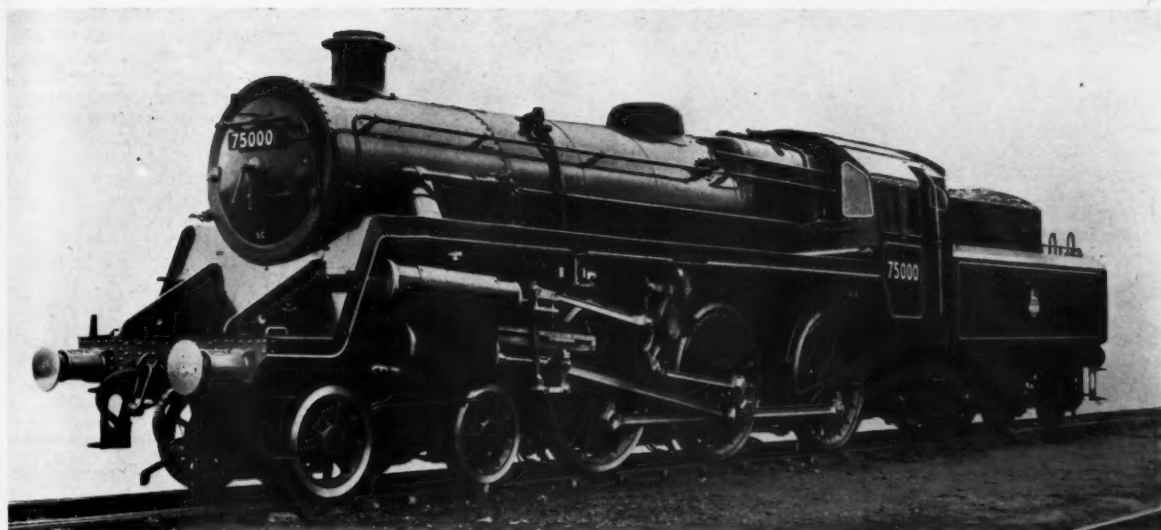
Both classes have evidently been designed to develop the same proportion of their maximum tractive force at the same speeds in m.p.h. and at an equal number of revolutions per min. Further, the relation between the boiler heating surfaces and the grate areas are equal in

(Continued on page 241)

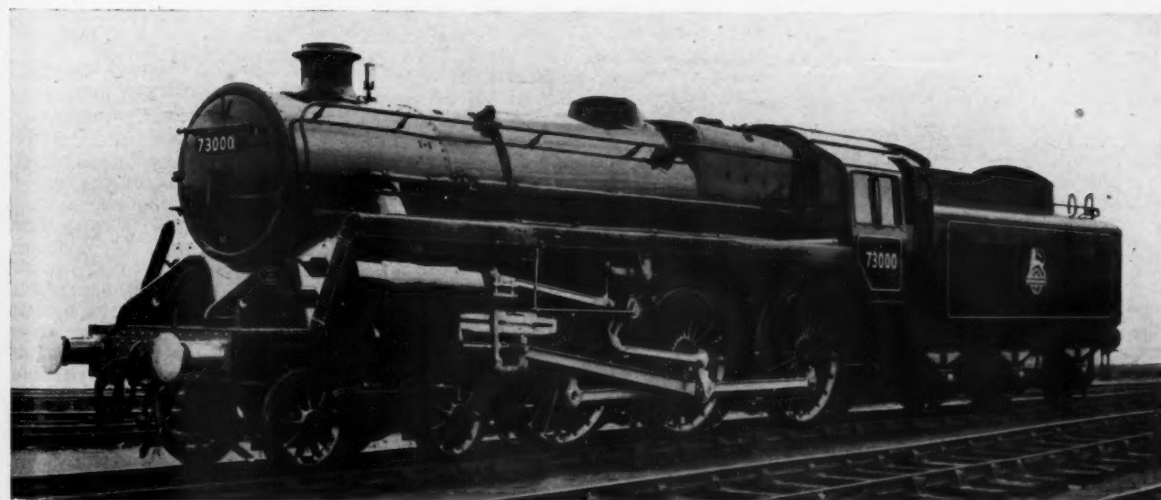
Proportions of British Standard Locomotives



Class "4" 2-6-4 tank locomotive



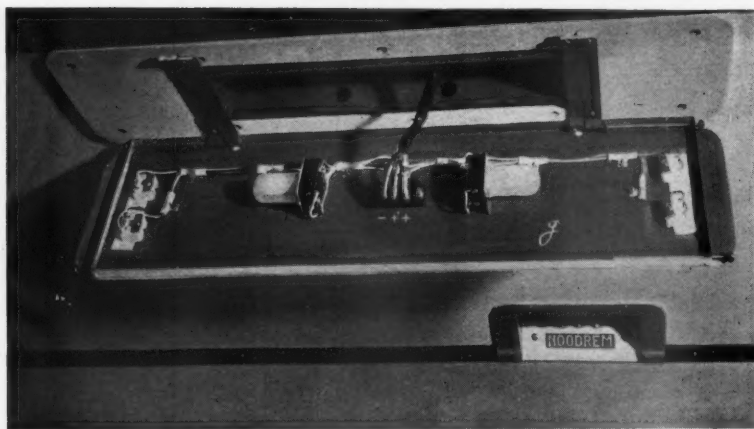
Class "4" 4-6-0 tender locomotive



Class "5" 4-6-0 tender locomotive

A Simplified D.C. System for Fluorescent Lighting

Circuits dispensing with auxiliaries other than resistive ballasts are suitable for operation in rolling stock direct from batteries



Fitting opened to show stabilisers and wiring

THE tendency that has been in evidence for some time towards simplifying the circuits and auxiliary components used in fluorescent lighting is of particular interest for transport applications. In alternating current systems it has led to the use of a high frequency; with resonant starting circuits

which ballasts are the only auxiliaries required. Their principles of operation are applicable to d.c. as well as a.c. systems, so that they offer the possibility of simplified fluorescent lighting installations in railway vehicles if short lamps suitable for running on a medium voltage are used.

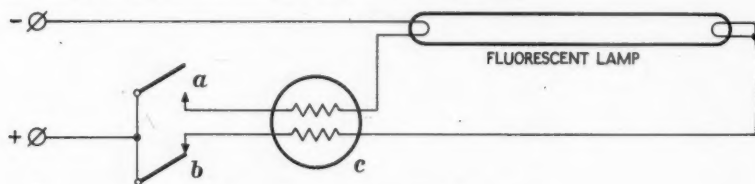


Fig. 1—Lamp operating circuit

for the lamps that dispense with starter switches, as in the London Transport "R" stock cars. Such installations, however, involve either modifying existing rotary machines to give an a.c. output, or using some form of converter specially for this purpose, while normally voltage regulators are required as well.

When a d.c. supply of sufficient voltage is available, rotaries are unnecessary, but the need for voltage stabilisation remains. Switch-start lamp circuits are commonly used, and may incorporate relays to short-circuit the starters after the lamps have struck, to prevent "chattering" of the starter contacts in low-voltage conditions and flickering of the lamps. Moreover, a switch-start d.c. circuit requires both a choke to provide the induced voltage that initiates the discharge in the lamp, and a resistive ballast to limit the current when the lamp is alight.

Since these methods of transport vehicle lighting were adopted, new circuits and fittings have been introduced for general illumination purposes in

A circuit of the type referred to is shown in Fig. 1. This arrangement, developed by the Philips organisation, has been installed in vehicles of the Netherlands Railways and the Belgian National Railways, using special 14W. and 15W. lamps operated direct from 72V. batteries. A 20W. lamp of the same type is also available, and is suitable for rolling stock with a 110V. d.c. supply such as is found in some steam train coaches overseas.

Push Button Control

The lamp is controlled by the two push-buttons, A and B (Fig. 1). When A is depressed, the filament at the negative end of the lamp is heated and emission of electrons begins. The lamp strikes within a fraction of a second and remains alight after A is released because of the potential between the positive and negative electrodes. To switch the lamp off, push-button B is operated, thus disconnecting the lamp anode from the positive pole of the battery. The discharge ceases at once and B can return to its normal closed position without the lamp

striking again, because although the potential across the lamp will maintain the discharge once it has begun, it is insufficient to initiate it unless the cathode heating circuit is closed.

To ensure striking in all atmospheric conditions, the special Philips lamps used in this circuit are made with internal conducting stripes connected to each electrode; their ends are separated by a short gap across which a pilot discharge takes place and assists in establishing the main discharge. The lamps used in Belgium and Holland have a colour temperature of 2,900°K, which is close to that usually known commercially as Warm White.

It will be noticed that no arrangement for reversing polarity is shown in the schematic circuit, Fig. 1, or the installation diagram, Fig. 2. This is because the special short lamps employed do not exhibit the eventual blackening at one end seen in some fluorescent lamps operated permanently with the current in one direction.

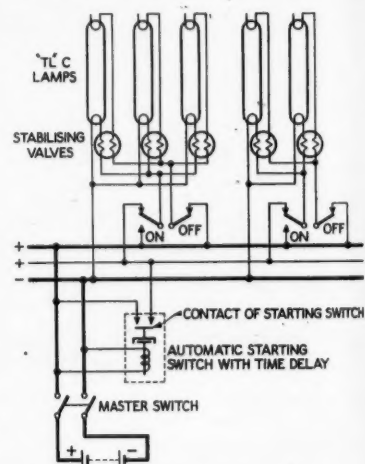


Fig. 2—Wiring diagram showing alternative switching systems for groups of lamps in compartments

The bottom resistance element in the diagram of the ballast, C (Fig. 1), has the double effect of limiting the lamp current and also maintaining its value stable within close limits during fluctuations in the supply voltage. This barretter action renders a voltage regulator in the lighting supply system unnecessary, and is a valuable contribution towards the general simplification of equipment made possible by this form of circuit. The resistance in the pre-heating circuit has similar characteristics, so that with switch A closed the full battery voltage is across the resistance and electrode, the latter thus reaching the temperature necessary for the lamp to strike almost instantaneously. Both

resistance elements are contained in a single glass bulb with a 4-pin base, so that this form of ballast and stabiliser is exceptionally compact and easy to install or replace.

A typical arrangement for incorporating circuits of this type in a coach lighting system is seen in Fig. 2, which shows schemes for local switching of lamps singly or in groups subject to the guard's overriding control. When the guard closes his master switch *A*, relay *ST* closes and connects all heaters to the positive side of the battery via 'line +', and the back contacts of the passengers' "on" push-buttons. Relay *ST* re-opens automatically after 2-3 sec., by which time the lamps will have struck and no longer require heater current. Any lamp or group of lamps can be switched off from the passengers' "off" push-buttons, or switched on again by means of the "on" buttons, as long as the guard's master switch remains closed.

The characteristic shape of the fluorescent lamp facilitates the production of lighting fittings which blend well with modern rolling stock interiors. In one lightweight design by Philips Electrical Limited, two 20W. lamps of the type described above are enclosed by a cover of clear reeded plastic material with opal ends. The standard bi-pin lampholders are attached to a hinged backplate, which can be swung down for access to the stabilising ballasts and wiring, mounted on the opposite side of the plate to the lampholders. Maintenance, therefore, is simplified to the utmost.



Installation of Philips d.c. fluorescent lighting in an open-type coach of the Netherlands Railways

Proportions of British Standard Locomotives

(Concluded from page 238)

each case; thus, the evaporative powers of the heating surface may be expected to be much the same, assuming equal rates of firing.

The excellent feature of high boiler steaming capacity in relation to the steam demand has, in the class "7," already demonstrated its value in service.

The two standard 4-6-0 types will no doubt be useful machines. Of the two, the small class "4" is especially interesting. If reference is made to the previous articles already mentioned, more especially to part 1, *The Railway Gazette*, August 18, 1950 (page 180), it will be noted that, when referring to passenger locomotives of the 4-4-0 type, the opinion was expressed that the future of this type was rather uncertain, and that probably it would give place to a 4-6-0 design. Such, it now seems, is to be the case, the statement having been made that the class "4" engines are "for duties of the kind which are at present worked by obsolescent locomotives of the 4-4-0 wheel arrangement."

The larger of the new 4-6-0 types, class "5," is a modification of the L.M.S.R. class "5" and has the same boiler as those of the former design, which have 28 element superheaters. The boiler factors B, and BD, are of much the same values for the original and modified class "5" locomotives;

on the other hand, generally, they give the impression that it might possibly have been better to retain the original cylinder diameter of 18½ in. rather than increase this dimension to 19 in.

Dimensions of 4-6-0 Locomotives

The dimensions of the two 4-6-0 classes, when compared, again bring out the same consistency as was seen in the case of the two Pacific classes. Here again, the B, and BD, factors have the same relationship to each other which good designing would dictate. The relative values of the BD factors clearly show that both these engine classes have been designed for the same speeds in revolutions per minute and have the diameters of their driving wheels proportioned to the mean speeds, in m.p.h., at which they will operate. The former feature is shown by the values of the respective BD factors, which are alike, and the latter in the values given for factors B. In the case of the smaller engine, the factor B has a higher value, which would be expected.

In regard to the respective boiler proportions, the class "4" engines are seen to have rather more grate area compared with the boiler heating surfaces. The reason for this is probably that the boiler used is derived from a former design fitted to a tank engine, in which case grate area is often more readily obtainable than heating surface on account of weight limitations frequently set by the added weight of water tanks.

The table of dimensions includes particulars of existing 4-6-0 type engines for mixed-traffic, built for the former main-line railways. This information is taken from the previous article and gives, for comparative purposes, the proportions of the class "5" L.M.S.R.; L.N.E.R. "B1"; G.W.R. "Hall"; and Southern Railway 4-6-0 class "H15." The average values of the B, and BD, factors for these four designs are 15 and 1089 respectively, and the average value for the amount of tractive force (maximum) allowed for each sq. ft. of grate area is 932.

The L.N.E.R. class "B1" and the new class "5" standard locomotives are seen to be similar when their respective B, and BD, factors are examined. Similarly, if the new standard design is compared with the original L.M.S.R. class "5," the latter will be seen to have some advantage from the point of view of boiler capacity in relation to the potential cylinder power. As mentioned, it would seem that the original cylinder dimensions might have been retained, so bringing the B, and BD, factors and the tractive force/grate area ratio more into line with the earlier engines.

No direct comparison can be made with the new class "4" tender engines. It will, however, be evident that they are not intended for the same average speeds in m.p.h. as the class "5" locomotives. On the basis of speeds in revolutions per min., the boiler demand factors BD are equal in each case.

Miners' Cap Lamps in Motive Power Depots

Installation used by fitters at some thirty depots of British Railways

AS we recorded in our January 11 issue, British Railways are to extend the use of miner's cap lamps, which have been tried out experimentally by motive power depot staff when examining locomotives and boilers.

These lamps are the same type as are in wide use in mines throughout the world. The makers are the electrical engineering firm of Oldham & Son Ltd., Denton, Manchester, which pioneered the miner's cap lamp in this country, and introduced self-service for battery-operated mine lighting equipment.

The Oldham cap lamp is of one-piece design. The accumulator, which is carried on the belt, is housed in a hard rubber container and connected to the headpiece of the lamp by a rubber-cased cable.

At Kings Cross Motive Power Depot, Eastern Region, the installation, which is precisely similar to but on a much smaller scale than installations for mines, consists of 25 GW cap lamps, 2 WS hand lamps, and a standard 27 type GW charging frame on the self-service system. The lamps at Kings Cross are used by 18 fitters working in a team of six on each shift of eight hours. Examiners also use cap lamps, and the hand lamps are for the foremen. Each man is allotted his own lamp, for which he is responsible. On reporting for duty he collects his lamp from the charging frame and at the end of each shift replaces it on charge.

Investigations show the lamps are popular in the depots, as, apart from the increased light output, the men find

that, with both hands free, they can work more quickly and with greater ease and comfort.

Other British Railway motive power depots where similar equipment has so far been installed are:—

Bricklayers Arms (London)	Longsight
Bristol, Bath Road	Newton Heath
Camden (London)	Nottingham
Carlisle	Old Oak Common
Colwick	Rugby
Corkerhill	Saltley
Crewe North	Thornton
Crewe South	Toton
Cricklewood	Wakefield
Darlington	Wednesbury
Derby	Wellingborough
Exmouth	Wigan
Grimethorpe	Willesden
Holbeck	York
	Liverpool



(Left) Charging frame at Kings Cross Motive Power Depot, showing cap lamps on charge, and (right) fitters at the depot examining a locomotive with the aid of cap lamps

WITHDRAWAL OF FORMER HIGHLAND RAILWAY LOCOMOTIVE NO. 136.—British Railways locomotive No. 57695, formerly Highland Railway No. 136, the last of its class, has been withdrawn and is to be broken up at Kilmarnock. It was the third of ten 0-6-0 freight locomotives built between 1900-

1902 for the Highland Railway by Dubs to the design of Mr. P. Drummond, Locomotive Superintendent of the Highland Railway from 1896 until 1911. Most of the working life of the locomotive has been in former Highland Railway territory. For a time, from 1938 onwards, the engine was

attached successively to Hurlford, Motherwell, and Corkerhill Motive Power Depots of the L.M.S.R., but towards the end of the war returned to Inverness. After the Grouping, the locomotive was rebuilt with Caledonian type boiler, renumbered L.M.S. No. 17695 and classified "3F."

RAILWAY NEWS SECTION

PERSONAL

Mr. A. L. Crewe, General Assistant to the Chief Regional Officer, Eastern Region, has been appointed Assistant Regional Staff Officer, Eastern Region.

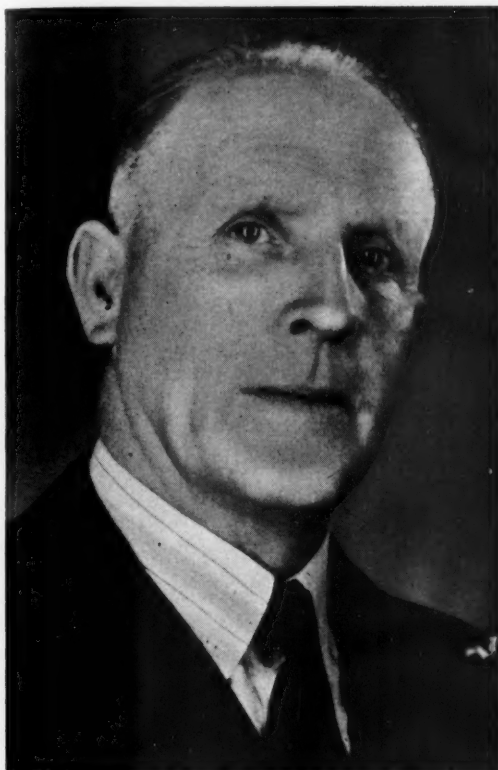
Mr. F. C. Garside, M.Inst.T., who, as recorded in our February 22 issue, has retired as Commissioner for Railways, New South Wales, was born at Goulburn,

Regional Group of the Institute of Public Administration, and he is a past Chairman of both.

Mr. H. R. Garth, Assistant Civil Engineer, North Eastern Region, British Railways, has retired.

Messrs. N. D. Grundy and C. R. Curtis have joined the board of Gordon Hotels Limited.

Engineer, Construction, to begin work on the new Hawkesbury River Bridge. In May, 1940, he enlisted in the 2nd A.I.F. and was appointed to command the Railway Construction Group overseas; the Group carried out important railway work in the Middle East. For the part he played Mr. Fraser was awarded the O.B.E. and mentioned in despatches. On his return to the Railways Department in 1943 he supervised all construction work. In 1945 he



Mr. F. C. Garside

Commissioner for Railways, New South Wales,
1948-52



Mr. K. A. Fraser

Appointed Commissioner for Railways,
New South Wales

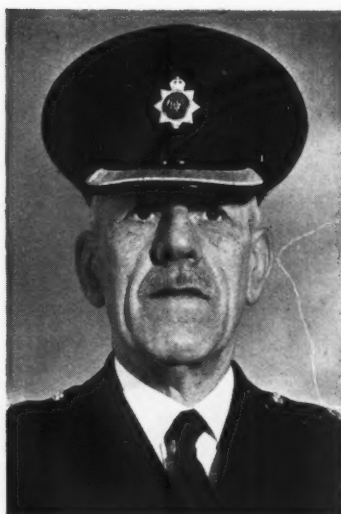
N.S.W., in 1887, and joined the railway service in 1903, as an apprentice fitter in the Goulburn workshops. On completion of his apprenticeship he was appointed a fitter at Eveleigh Workshops. During the next twelve years he gained wide experience in various positions of the service, such as shed foreman, Murrurundi; fitter-in-charge, Nyngan; relief inspector, Eveleigh; Assistant Outdoor Superintendent, Newcastle, and District Inspector, Sydney. When the Suggestions, Inventions & Economics Board was established in 1920, Mr. Garside was appointed as one of its three members. He later became Comptroller of Stores, and held this office until his appointment as Assistant Commissioner for Railways in December, 1932. When Mr. T. J. Hartigan retired from the office of Commissioner for Railways, Mr. Garside was appointed to that position as from October, 1948. Mr. Garside has taken an active interest in the activities of the New South Wales Centre of the Institute of Transport and the New South Wales

During a recent visit to Southern Rhodesia, Khan F. M. Khan, Director-General of the Pakistan Railways, spent a few days in Bulawayo with Sir Arthur Griffin, General Manager, Rhodesia Railways.

Mr. K. A. Fraser, O.B.E., A.M.I.E. (Aust.), M.Inst.T., Chief Civil Engineer, New South Wales Government Railways, who, as recorded in our February 22 issue, has been appointed Commissioner for Railways, New South Wales, was born in 1893 and entered the Department of Railways in 1911 as a cadet. After experience on deviation and duplication works, he enlisted in January, 1915, and served three years in France with the 12th Field Company (Engineers) as Lieutenant. In 1922 he was appointed Resident Engineer for the Sydney Underground Railway and supervised the construction of the four existing underground stations. After a period as Resident Engineer, Maintenance, he was appointed, in 1938, Supervising

was appointed Assistant Chief Civil Engineer, Construction, and in 1946 he became Deputy Chief Civil Engineer. Later he was transferred to the Transport & Highways Commission as Chief Engineer. He became Chief Civil Engineer, N.S.W. Government Railways, in November, 1950. Mr. Fraser is a past member of the New South Wales Centre of the Institute of Transport.

We regret to record the death on February 13 of Mr. F. E. Jordan, Catering Superintendent of the Rhodesia Railways. He was born in 1900 at Acton, Middlesex, and entered the Rhodesia Railways in 1925 as a book-keeper at the Victoria Falls Hotel; after eleven years' service there, he was transferred to the Head Office, Catering Department, Bulawayo. He served in several important posts in the Department, and also acted as Manager of the Savoy Hotel, Beira, before returning to the Victoria Falls Hotel as Manager. He became Catering Superintendent in 1949.



Mr. A. B. Mortimer

Divisional Police Superintendent Kings Cross, B.T.C. Police, who has retired



The late Mr. Warren Storey

Electrical Engineer, Coras Iompair Eireann, 1945-48



Mr. J. D. C. Churchill

Appointed Planning Officer, London Transport Executive

Mr. A. B. Mortimer, Divisional Police Superintendent, Kings Cross, British Transport Commission Police, who, as recorded in our February 8 issue, has retired, joined the Railway Police 32 years ago after 13 years with the Grenadier Guards. He became a Supernumerary Constable at Kings Cross in August, 1919, and following rapid promotion was appointed Detective Sergeant at Hitchin in 1923. He was transferred to Marylebone in the grade of Detective Sergeant in 1932 and later in that year became Inspector at Bishopsgate. In 1933 Mr. Mortimer was appointed Detective Inspector at Kings Cross and he was transferred to Grimsby Dock in a similar capacity in 1940. He became Superintendent at Cambridge in 1944, and was transferred to Liverpool Street in 1947, afterwards becoming Superintendent at Kings Cross in 1950. He has travelled on many Royal trains and led a party of railway police who helped to line the route at the Coronation of His late Majesty King George VI. He has always taken a keen interest in railway police organisation, including the use of police dogs, and he was Lecturer at Peel House, Grimsby Docks and London.

Mr. William G. Miller has been elected Executive Vice-President, Montreal Locomotive Works Limited.

ARGENTINE RAILWAYS APPOINTMENTS

The following appointments have recently been made on the Argentine railways:—

D.F. Sarmiento Railway.

Mr. Miguel V. Sanguinetti, to be Chief of the Way & Works Department and also Acting Chief of the Stores Department.

General Belgrano Railway.

Mr. Alejandro N. Sanguinetti, to be Chief of the Traffic Department.

Mr. D. David Firpo, to be Acting Chief Accountant.

General San Martin Railway.

Mr. Antonio Sansogni, to be Chief of the Traffic Department.

General Roca Railway.

Dr. Miguel Revestido, General Manager of the General Belgrano Railway, has also assumed the Management of the General Roca Railway.

Mr. Warren Storey, M.I.E.E., M.I.C.E.(I.), Electrical Engineer, Coras Iompair Eireann, 1945-48, and since then an engineering representative of J. Stone & Co. (Deptford) Ltd., whose death we recorded briefly in our February 22 issue, was educated at St. Andrew's College, Dublin, and received his early training with Messrs. Egan & Tatlow, Electrical Engineers, Dublin. After completing his pupilage, he became principal Technical Assistant with that firm, and carried out important contracts in Dublin and in various parts of Ireland. He joined the staff of the former Great Southern & Western Railway, Ireland, in 1911 as Electrical Engineer, and was appointed Electrical Engineer to the amalgamated companies in 1925. On the formation of Coras Iompair Eireann in 1945 he took charge of the electrical work of that company, and, on the retirement of Mr. Finlay, Electrical Engineer, Tramways Department, he also took charge of the electrical work in that section. Some years ago the former Railway Board presented Mr. Storey with a premium in recognition of a comprehensive report which he submitted after a visit to the principal American railways. He took a prominent part in the activities of the Irish Centre of the Institution of Electrical Engineers and was Chairman of the Centre in 1935 and 1936. He was a Member of the Institution of Civil Engineers, Ireland, and had been President of the Engineering & Scientific Association, Ireland.

Mr. R. B. W. Bolland has been appointed General Manager of Head Wrightson Aluminium Limited.

DINNER TO MR. A. J. BROUGHTON

A dinner was held at the Shelbourne Hotel, Dublin, on February 19, to mark the retirement next month of Mr. A. J. Broughton, Irish Traffic Manager, British Railways. Mr. A. E. Hammett, Commercial Superintendent, London Midland Region, British Railways, presided, and among those present were: Messrs. C. Furber, Commercial Superintendent, Western Region; E. S. Hunt, Assistant Chief Regional Officer, London Midland Region; and T. C. Courtney, Chairman, Coras Iompair Eireann.

Mr. J. D. C. Churchill who, as recorded in our January 11 issue, has been appointed Planning Officer, London Transport Executive, responsible for the functions carried out by the Development & Research Officer, is 39. He was educated at Cheltenham College and after joining the Underground Group of companies in 1929, served in several departments before being appointed to the office of the Vice-Chairman, the late Mr. Frank Pick, in 1939. During the war he served in operations in Europe and the Mediterranean, becoming a Brigade Major in 1944. On demobilisation he was appointed to the Chairman's office and served as Secretary to the Chairman from April, 1947. He has been responsible for the work of the Development & Research Office since 1948.

We regret to record the death on February 15 of Mr. D. M. Denholm, M.I.N.A., M.I.Mech.E., a Director of L. Gardner & Sons Ltd., and of Norris, Henty & Gardners Limited.

Mr. W. A. Watson has been appointed Traffic Manager for Canadian National Railways Foreign Freight Department, with headquarters at Montreal. Mr. Watson, who formerly was Foreign Freight Agent at Toronto, succeeds the late Mr. F. J. Stock.

We regret to record the death on February 18, at the age of 84, of Mr. Arthur Lord, Managing Director, Coventry Machine Tool Works Limited, and a founder of the company. The funeral was at Holy Trinity Church, Leamington Spa, on February 21.

We regret to record the death, at the age of 79, of Brigadier-General R. B. D. Blakeney, C.M.G., D.S.O., General Manager, Egyptian State Railways, 1919-23. He joined the Army in 1891 and after serving in various parts of the world, became Deputy General Manager, Egyptian State Railways in 1906, a position he continued to hold until 1919. During 1915 he was concerned with operations on the Suez Canal and later in that year was appointed Assistant Director of Railways, Mediter-

anean Expeditionary Force, Dardanelles. In 1916 he became Deputy Director, Railway Traffic, Egyptian Expeditionary Force, and three years later was appointed Director, Railway Traffic, E.E.F., with the rank of Brigadier-General. He was appointed General Manager, Egyptian State Railways, in 1919 and held that position until 1923.

Sir Godfrey Mitchell, part-time Member of the National Coal Board, has resigned.

The Southern Region of British Railways has announced that Mr. N. H. Smart, Chief Clerk, Treasurer's Department, Deepdene, has been appointed Assistant Treasurer, Deepdene House.

British Railways announce the appointment of Mr. J. R. Johnson, Assistant District Road Motor Engineer, Blackburn, London Midland Region, as District Road Motor Engineer, London, Eastern Region.

We regret to record the death on February 24, at the age of 76, of Sir Roger Hetherington, C.B., O.B.E., M.I.C.E., President of the Institution of Civil Engineers for 1947-48.

Mr. W. P. Mellen has been appointed a Director of the Butterley Co. Ltd.

The Minister of Transport has approved the appointment of the following persons to be members of the Transport Users' Consultative Committee for the Yorkshire Area:—

Lt.-Colonel R. S. Goodhind, Transport Manager, Newton Chambers & Co. Ltd.

Mr. J. H. Gibb, Transport Controller of British Oil & Cake Mills Limited, and Olympia Oil & Cake Co. Ltd.

Mr. H. Shilleto, Council Delegate of the National Farmers' Union, Yorkshire (West Riding) County Branch.

Councillor N. Bisby, Member of the East Riding County Council.

LONDON MIDLAND REGION APPOINTMENTS

The following appointments have been announced by the London Midland Region of British Railways:—

Mr. F. Ardern, Master (Passenger), Heysham, to be District Marine Manager & Harbour Master, Holyhead (reorganisation and position redesignated).

Mr. H. Stokes, Station Superintendent, Holyhead, to be Assistant District Marine Manager, Holyhead (reorganisation and position redesignated).

Mr. I. G. White, Acting Assistant District Engineer, Nottingham, to be Assistant District Engineer, Walsall.

Mr. C. L. Parkinson, Resident Engineer, Civil Engineer's Department, Euston, to be Assistant District Engineer, Barrow.

MEMORIAL TO SIR HERBERT WALKER

Sufficient subscriptions for the permanent memorial to the late Sir Herbert Walker, General Manager of the Southern Railway, 1923-37, and afterwards a Director, have been received by Mr. John Elliot, Chairman, Railway Executive, to enable the work to go forward. Mr. Donald Gilbert has been commissioned to execute the memorial, which will take the form of a full face head, cast in bronze, and set in Portland stone, with an inscription. It will be placed at the entrance to the old general offices at Waterloo Station, opposite No. 21 platform. Subscribers will be invited to attend the unveiling ceremony, which is expected to take place in the Spring. Previous reference to the memorial was made in our April 20, 1951, issue.

Mr. J. H. Bruce, who retired in 1928 as Superintendent for Railways, Railway Passengers Assurance Company, celebrated his ninetieth birthday on February 16.

We regret to record the death on February 20, at the age of 88, of Mr. W. H. Anderson, a former Director & General Manager of Cravens Railway Carriage & Wagon Co. Ltd. Mr. Anderson retired in 1935.

Mr. S. J. L. Hardie has resigned as Chairman of the Iron & Steel Corporation of Great Britain and will be succeeded by Sir John Green, formerly Deputy Chairman.

Mr. C. D. B. Williams, who has been closely associated with the Van Der Horst interests in the United Kingdom for some 15 years, will in future represent not only the Dutch and American Van Der Horst interests in this country, but also Monochrome Limited in its extended sphere of activity in connection with cylinder bore plating.

NORTH EASTERN REGION STAFF CHANGES

The North Eastern Region of British Railways has announced the following staff changes:—

Mr. H. T. Horsfield, Senior Assistant, New Works Office, Civil Engineer's Department, Kings Cross, Eastern Region, to be Assistant District Engineer, Bradford, North Eastern Region.

Mr. I. V. Longley, District Motive Power Superintendent, Newcastle, has retired.

We regret to record the death on February 23, at the age of 69, of Sir James Lithgow, Bt., G.B.E., C.B., M.C., T.D., D.L., J.P., LL.D., a prominent figure in shipbuilding and a leading Scottish industrialist. Among other companies, he was Chairman of Lithgows Limited and of Fairfield Shipbuilding & Engineering Co. Ltd., and was a Director of R. Y. Pickering & Co. Ltd. and the North British Electric Welding Co. Ltd. He was President, Federation of British Industries, 1930-32 and President of the British Iron & Steel Federation between 1943-45.

FUNERAL OF MR. W. S. GRAFF-BAKER

The funeral of Mr. W. S. Graff-Baker, Chief Mechanical Engineer (Railways), London Transport Executive, who died on February 15, took place at Golders Green Crematorium on February 20. In addition to family mourners, those present included:—

London Transport Executive: Lord Latham, Chairman; Mr. John Cliff, Deputy Chairman; Mr. A. H. Grainger; Mr. A. B. B. Valentine; Chief Officers and Officers; Staff from Acton Works and railway depots; retired officers and staff, including Mr. W. A. Agnew, late Chief Mechanical Engineer (Railways).

British Transport Commission: Sir William Wood, Mr. J. H. Brebner.

Railway Executive: Mr. R. C. Bond (representing Sir William Stanier and Mr. R. A. Riddles); Messrs. J. L. Harrington; A. Endicott; F. T. Muncey; E. J. S. Wilcock (representing Mr. E. W. Rostern); Colonel H. Rudgard, late Chief Officer, (Motive Power).

Also among those present were: Lt.-Colonel D. McMullen (representing Inspecting Officers, Railways, Ministry of Transport); Colonel K. R. N. Speir (representing Transportation Club); Messrs. R. Chalmers, Engineers' Guild; G. T. Hart, J. F. B. Vidal, Institution of Locomotive Engineers; Sir Archibald Boyd, Messrs. H. Green, R. A. Powell, Metropolitan-Cammell Carriage & Wagon Co. Ltd.; G. E. Brinkworth, G. E. Embleton, Gloucester

Railway Carriage & Wagon Co. Ltd.; R. C. Giggins, General Electric Co. Ltd.; R. E. G. Mayhew (also representing Mr. T. L. Taylor), Taylor Bros. & Co. Ltd.; K. H. Leech, Westinghouse Brake & Signal Co. Ltd.; W. Shorter (representing Mr. D. F. Brown), Westinghouse Brake & Signal Co. Ltd.; H. A. A. White, United Steel Companies Limited; B. C. Purkiss, Robert Kearsley & Company; H. E. Clark, Brown Bayley Steels Limited; H. F. Farmer (representing Mr. H. L. Satchell), A. F. Harvey, F. E. Butler (representing Mr. C. F. Gimson), British Thomson-Houston Co. Ltd.; J. C. Way, Metropolitan-Vickers Electrical Co. Ltd.; F. D. M. Harding, N. Johnson, Pullman Car Co. Ltd.; C. M. Cock, English Electric Co. Ltd.; G. Godfrey, J. Spencer, George Spencer, Moulton & Co. Ltd.; E. V. Arnold, Patent Lighting Co. Ltd.; D. E. Coles, W. A. Frater, Waygood-Otis Limited; C. L. S. Trask, Birmingham Railway Carriage & Wagon Co. Ltd.; S. C. Besant, Crompton Parkinson Limited; Randal J. Harvey, Consulting Engineer, New Zealand Government Railways.

FUNERAL OF MR. E. T. DAVIES

A funeral service for Mr. E. T. Davies, District Engineer, Paddington, Western Region, who died on February 14, was held at Henley Road Crematorium, Reading, on February 18. In addition to family mourners, those present included:—

Western Region: Messrs. M. G. R. Smith, Civil Engineer; E. C. Cookson, Assistant Civil Engineer (also representing Mr. A. S. Quartermaine, Mr. C. H. Morgan, and the former 152nd Railway Construction Company, R.E. (S.R.)); H. E. Hedges, representing Mr. K. W. C. Grand, Chief Regional Officer; S. Gray, representing Mr. H. G. Bowles, Assistant Chief Regional Officer; W. G. Canning, representing Mr. R. Burgoyne, Regional Staff Officer; G. D. S. Alley, Assistant Engineer (Permanent Way); A. N. Butland, District Engineer, Bristol; N. S. Cox, District Engineer, Plymouth; S. Stevens, District Engineer, Newport; R. F. Wilson, District Engineer, Wolverhampton; F. L. Lambert, District Engineer, Shrewsbury; J. F. Bickerton, Assistant District Engineer, Paddington; R. T. Jones, Assistant District Engineer, Neath; P. S. A. Berridge, Bridge Assistant; H. Savage, New Works Assistant; R. H. Cunningham, New Works Section, Paddington; A. W. Woodbridge, Signal & Telegraph Engineer, Reading; C. W. Powell, Assistant Operating Superintendent, also representing Mr. Gilbert Matthews, Operating Superintendent; N. H. Briant, District Operating Superintendent, Paddington; E. C. Bourne, District Motive Power Superintendent, Paddington, also representing Mr. W. N. Pellow, Motive Power Superintendent; H. Forth, Assistant Chief Accountant; T. J. Tarrant, District Carriage & Wagon Engineer, London; E. Flaxman, District Goods Superintendent, Reading, also representing Mr. C. Furber, Commercial Superintendent; E. P. Platt, Assistant Estate & Rating Surveyor; F. H. Skiller, representing Major Dewar, Public Relations and Publicity Officer; A. V. Williams, representing Mr. A. F. Stanbury, Staff & Office Assistant to Chief Engineer; R. G. Sargent, former Bridge Assistant; F. C. Hockridge, former Surveyor; J. F. H. Tyler, Assistant to Signal & Telegraph Engineer; A. P. Wigram, Assistant Signal & Telegraph Engineer; H. Wheeler, former Assistant to General Manager.

Also among those present were: Messrs. F. J. J. Prior, District Engineer, Purley, Southern Region; R. H. Edwards, Docks Engineer, Eastern Division, South Wales Docks; I. Powell, Assistant Docks Engineer, Eastern Division South Wales Docks; Dr. Newnham, representing Dr. Cavendish Fuller, Chief Medical Officer, Railway Executive; Mr. S. Sweeney, Hotels Executive.

Ministry of Transport Accident Report

Ford, Southern Region, British Railways; August 5, 1951

Brigadier C. A. Langley, Inspecting Officer of Railways, Ministry of Transport, inquired into the accident which occurred at 11.58 a.m. on August 5, 1951, at Ford, when the 11.17 a.m. six-coach electric train, Brighton to Portsmouth, booked to stop, which had been stopped at the outer home signal, ran past the inner homes at danger and collided at about 18 m.p.h. with the 10.47 a.m. eight-coach electric train, Three Bridges to Bognor, standing in the down loop. The first vehicle of the Portsmouth train and rear vehicle of the Bognor train were telescoped for about 40 ft. and four other coaches were damaged, but there was no derailment.

Eight passengers and the motorman of the colliding train were killed and 47 pas-

engers injured, of whom 40 were detained in hospital. Assistance was promptly obtained. Arrangements were at once made to re-organise the traffic and breakdown cranes arrived by early afternoon. The up line was cleared at 5.45 p.m. and normal working resumed at 7.50. The weather was fine and the rails were dry. The accompanying diagram shows the lines, signals, and so on, essential to an understanding of the case.

	Strength of under-frame to resist end thrust	Shear strength of body end to resist telescoping
Prewar coaches	60	44
Motor involved in the accident	81	44
Latest postwar Motor	106	146
Southern Driving trailer...	90	146
Region stock	150	230
Future British Motor	150	230
Railways stock Driving trailer...	150	230

The shear strength of the body end is taken at a point just above floor level and

recently under control. Not until he heard the rattle of the bogies passing 32 points did he realise it was over-running. He attempted to attract the motorman's attention, but the cab was opposite his window and the man did not appear to hear his shouts or see his hand signals. He thought speed was about normal for a stopping train, and was positive that there was no emergency brake application. He was quite sure the inner homes were at danger. (This was confirmed by independent witnesses standing near the railway.)

A naval lieutenant, stopped in his car at the crossing, saw the first train stop and then the other approaching at, he thought, about 30 m.p.h. He expected it to pass through on the main line but as it neared

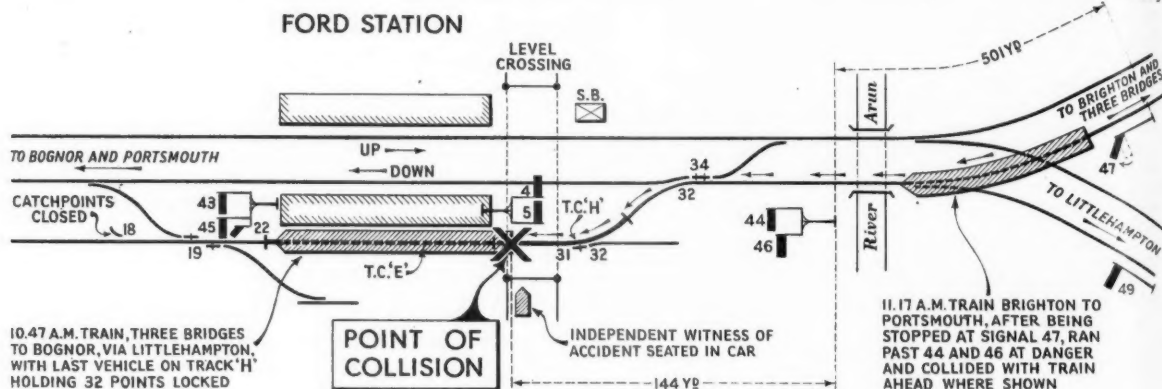


Diagram illustrating circumstances of accident at Ford, Southern Region, August 5, 1951

sengers injured, of whom 40 were detained in hospital. Assistance was promptly obtained. Arrangements were at once made to re-organise the traffic and breakdown cranes arrived by early afternoon. The up line was cleared at 5.45 p.m. and normal working resumed at 7.50. The weather was fine and the rails were dry. The accompanying diagram shows the lines, signals, and so on, essential to an understanding of the case.

The down platform, 474 ft. long, is just too short for an eight-coach train, and the Bognor train stood projecting 30 ft. beyond it. Normally, trains stopping at Ford are made up of four or six coaches, but eight-coach trains run regularly on Sundays, and occasionally on weekdays in the summer. The down platform is used for the reversal of some of these. The heaviest traffic in the summer is on Saturdays, when 87 down and 84 up trains pass.

Rolling Stock

The telescoped coaches were built in 1937 and had steel underframes and bodies of composite construction with steel panels on wooden framing. Considerable development has been made in design since then, and the electric stock now being built for the Southern Region has an all-welded steel body on a riveted steel underframe. The latest British Railways design incorporates an all-welded steel body on an all-welded frame and by applying modern methods of construction the following

is based on the ultimate shear strength of the materials. Future stock will also be fitted with automatic couplers, which should minimise the risk of over-riding of coupled underframes. This would not have affected this accident as there was no telescoping of coupled coaches.

Evidence

The Bognor train, which approached via Littlehampton, was due at 11.50 a.m. and booked to wait 5 min. to allow the Portsmouth train to precede it to Barnham after itself stopping at the down main platform at 11.52. "Is line clear?" was received for the two trains simultaneously, and the Bognor train accepted at 11.51, when the signalman reversed crossover 32 and pulled 34 and 19 f.p.l. levers. He then closed the level crossing gates to the road and cleared outer home 49 and then inner home 46. Knowing the train to be too long for the platform he restored 46 behind it, reversed 18 catch-points and cleared shunt-signal 22, to enable the motorman to draw forward and clear track circuit H. The train arrived at 11.54, and the Portsmouth train was then accepted. "Entering section" was received a minute later.

As he could not restore 32 points to normal the signalman did not clear outer home 47 until he saw that the train had stopped at it. He shouted to the guard of the Bognor train to hurry and draw ahead, but by this time the other train was coming forward to the inner homes, appa-

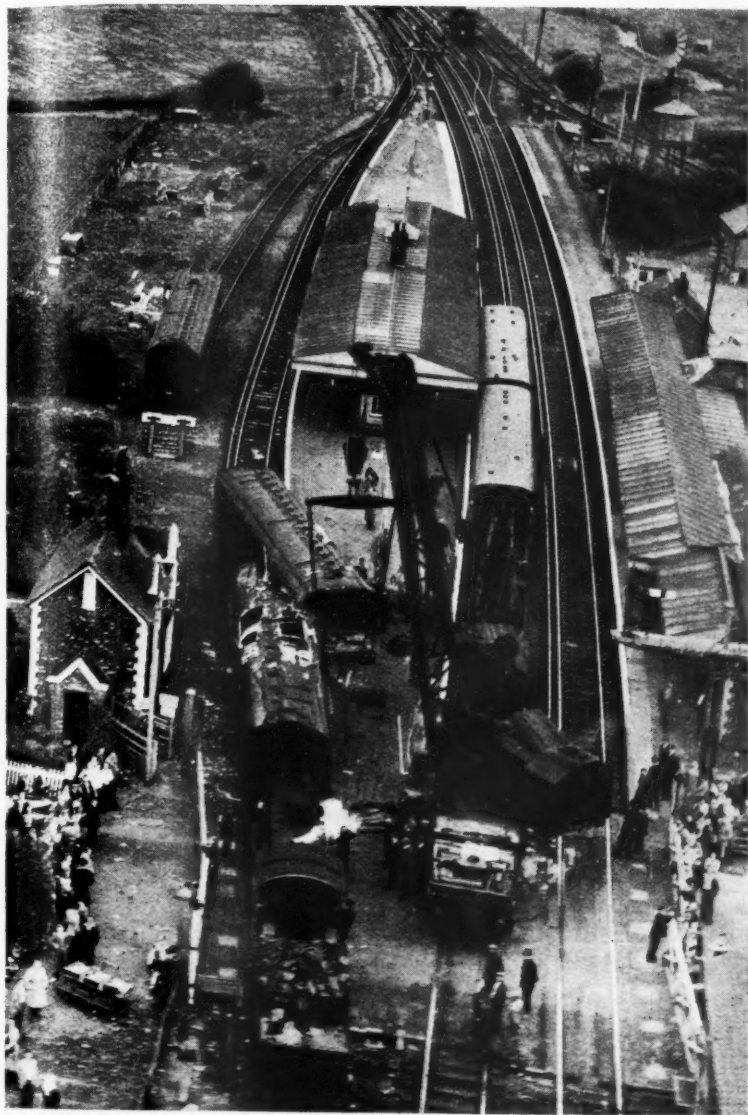
the station it appeared to swerve to the left. He saw the look of astonishment on the motorman's face, who leant to the right and appeared to be pulling at a control lever. Nobody else was in the cab.

The motorman of the Bognor train noted on stopping that the shunt signal was clear for him to draw ahead and crossed to the platform side to see what the guard wanted him to do and was waiting for his signal when the collision occurred.

The porter and the guard both knew the train had to draw forward but there was a misunderstanding between them as to who should give the order and some delay in finding the owner of a scarf left in a carriage. No action was taken by either man to get the train clear of the track circuit.

The guard of the Portsmouth train said that they were stopped at the box in rear. Arundel Junction, for 2½ min. and again at the outer home for ½ min. Looking through his periscope he saw this signal cleared. He began booking delays and failed to notice the inner homes. He thought speed about normal for a stopping train. The brake was in good order. At Brighton, he spoke to the motorman, who seemed in good health and spirits.

A test of the signalling equipment showed everything to be in order. The controller key of the colliding train was found in the reverse position and the inspector was confident that it must have



Aerial view of the wreckage after the accident at Ford, Southern Region

been turned at the last moment. It had to be depressed first and he did not think the key could have been moved by anyone in the rescue squad. In an absolute emergency a motorman would reverse the controller, probably before applying the brake.

Tests indicated that a train stopping at the down main line platform would pass the inner homes at about 25 m.p.h. and be travelling at about 18 m.p.h. when the leading cab passed the level crossing. An emergency brake application would stop a six-coach train in about 70 yd. from a speed of about 25 m.p.h.

Inspecting Officer's Conclusion

This accident was due to the Portsmouth train over-running the inner home signals. There is no doubt they were at danger. Consideration of the controls, and other circumstances convinced Brigadier Langley that the Portsmouth train was correctly accepted and signalled and stopped at the outer home in accordance with Rule 39A. The inner homes stand

out clearly against the skyline and are excellently sited. As soon as a train reaches the river bridge both main lines come into view directly ahead, and it is thought that the motorman, seeing the down platform clear, concluded that the inner home was off for him and entered at normal speed realising his mistake only when running through the crossover, when it was too late. He was 53, and had been a motorman for the last six years of his 37 years' railway service. He had a very good record.

The accident might have been averted, or at least the speed of collision would have been reduced had the guard made an emergency brake application. Rule 148 requires a guard to watch carefully and take necessary action when approaching important junctions and stations where his train is booked to stop. He is required to keep a good lookout and should he see any reason to apprehend danger make every effort to attract the driver's attention. In emergency he must apply the brake. Guards have other duties and cannot be

continuously on the look-out, but this guard, who had kept a good look-out hitherto, should not have allowed his attention to be diverted by other work when his train was approaching the inner homes, especially after being stopped at the outer home.

The misunderstanding between the porter and the guard of the standing train was unfortunate. Had either acted promptly the track circuit could have been cleared in time to allow 32 points to be restored.

Remarks

This failure of the human element illustrates once again the reliance that must be placed on railway staff carrying out scrupulously the fundamental rules of safety. Observance of signals is one requiring no emphasis.

Main line points should be restored behind a train invariably as soon as it has passed. At Ford, lengthening the down platform to take eight coaches seems the best way to permit this and the work will be completed before the next summer service begins.

Damage to the telescoped vehicles was not abnormal for 18 m.p.h., particularly as the point of impact was probably on the right hand buffer. The latest Southern Region coaches would have offered greater resistance and future stock will be even stronger, but coaches of the type involved have many more years of useful life and premature scrapping cannot be justified.

Shock-Absorbing Packings from Scrap Rubber Hose

The S.N.C.F. announced late in 1950 the adoption of scrap brake hose as packing material in wagons containing highly fragile goods, such as earthenware articles, enamelled stoves, and radiators, loaded in bulk. The brake hose is cut into lengths of approximately 2 ft. each, joined to form a rubber mattress. The considerable savings in claims payments which resulted have encouraged the S.N.C.F. to extend the use of such packing.

By the end of 1951, some 80,000 shock-absorbing packings had been put into service, more than half of them in the Northern Region, where manufacture first began. Five types have been made; the most favoured is a light packing weighing nearly 8 lb. and approximately 2 ft. by 1 ft. 4 in. in size. The largest packing weighs nearly 20 lb. and measures approximately 2 ft. by 2 ft. An attachment to the wire linking the pieces of brake hose makes it possible to connect two or more packings, even those of different types.

As the number of packings is still limited, they have been marked with the home station to which they must be sent back as soon as practicable, whether a suitable return load is available or not. Subject to this proviso, they can be used for loads anywhere in France. It is hoped that it may eventually be possible, when supplies are more plentiful, to permit unrestricted use on a common-user basis, with central distributing points at suitable towns throughout France. There is a standing instruction on the S.N.C.F. that damaged packings must be returned in bundles of 20 pieces to the workshop where they were made.

There is a continual demand for the extension of the facility, but manufacture of the packings can only proceed slowly as scrap brake hose becomes available. Packings are being produced at the rate of approximately 450 per working day.

European Passenger Services

Comparison between 1913 and 1951 in rail journey times between some Continental centres

The decline in Russian passenger train speeds since before the war of 1914-18 is the subject of a letter reproduced elsewhere in this issue. The accompanying table shows the fastest journey times between some European centres as shown in the summer timetables of 1913 and 1951, with certain exceptions where the 1913 summer service afforded a much longer journey, as to the Riviera, than the winter following.

Differences in routing invalidate comparison in distances, which are not shown. The shorter route *via* Gouda was responsible for the remarkable time of 55 min. from Amsterdam to Rotterdam in 1913; the fastest present time of 1 hr. 6 min. with one stop at The Hague, is that of the steam-hauled "Oiseau Bleu" (Amsterdam-Brussels-Paris), but mention should be made of the frequent electric service covering the 56 miles in 75 min. with 6 stops; even so, the steam service by both routes in 1913 was speedy and relatively frequent. The routes in Germany are not shown, as the routes or combinations of routes in the Ruhr and along the Rhine change, and always have changed, frequently, first one, and then another, as the new summer or winter timetables are published, being followed by the fastest trains. The comparative leisureliness of German timings in 1913 is marked. The fastest German runs before 1913 generally were on the Prussian State Railway over the northern plains to Berlin, with which no valid comparison is now possible because of the Zonal boundaries. The recovery of the Federal Railways since the last war is apparent.

The fastest train shown from Rome to Turin in 1913 was the "Rome Express." Acceleration in Italy has been facilitated largely by electrification, though today there is some fair steam running between Milan, Verona, and Venice. Doubling of some single-line sections also has resulted in faster running, as also in Switzerland.

Increase in Weight of Trains

Trains, other than diesel or electric railcars, generally are far heavier today than in 1913, largely to cater for traffic occasioned by a diminution in frequency. The 1913 timetables, however, show some surprising gaps, even in highly-populated areas such as Western Germany. The greatest increase in the weight of trains since 1913 combined with reduction in frequency is in France, though this does not apply to the Paris-Lyons-Marseilles services, which were not frequent before the 1920's, except for some very light winter *rapides* to the Riviera; the "Côte d'Azur Rapide" which provided the fastest 1913 time from Paris to Marseilles, 10 hr. 25 min., was a very light day train. The Paris-Lille service today is provided mainly by diesel three-car sets, which are lighter than the steam hauled *rapides* of the Nord of 1913. The 1951 Paris-Calais timings have barely improved. No comparison is possible of Paris-Strasbourg, or Paris-Basel, timings because of frontier changes.

Apart from the Talgo train between Madrid and San Sebastian and Irun, mainline timings today over the Spanish National Railways are creditable, bearing in mind the effects of the civil war. The distance from Lisbon to Oporto is 218

miles, so that the present schedule of 4 hr 50 min. over a mountainous route represents good work by the Portuguese Railways.

A comparison between 1913 and 1939 would not, probably, be more marked as regards journey times, except in Germany and Italy, in which latter country progress

has been made since 1945 in electrification and introduction of high-speed electric railcars (*elettrotreni*).

The greatest change in Western Europe since 1939 probably is in the reduction in frequency of services and in the number of *trains-de-luxe*, now almost non-existent as such, *i.e.* composed exclusively of Wagons-Lits Company's vehicles. Many smartly-timed secondary services have disappeared, and the speed of many fast trains has not been increased to the extent made possible by increases in power and improvement in track.

D = diesel hauled.

E = electrified throughout

Country	From	To	1913 hr. min.	1951 hr. min.	Remarks
Austria	Vienna	Feldkirch	14 51	11 55	1913: <i>via</i> Salzburg; 1951: <i>via</i> Amstetten and electrified from Amstetten
Belgium	Brussels	Arlon	3 29	3 4	
Denmark	Copenhagen	Ostend	1 28	1 26	
		Esbjerg	7 44	4 59D	1913: <i>via</i> Little Belt Ferry; 1951: over bridge
France	Paris	Belfort	5 26	4 17D	
		Bordeaux	6 53	5 37E	1913: from Quai d'Orsay, electrified to Paris Austerlitz; 1951: from Austerlitz
		Lille	2 54	2 28D	
		Marseilles	10 25	8 36	1913: winter only; 1951: electrified Paris to Dijon
		Rennes	5 51	4 34	1951: electrified Paris to Le Mans
Germany	Cologne	Basle	8 6	5 53D	
		Hamburg	6 57	5 43	
		Munich	10 52	7 26D	
		Milan	12 10	6 40E	1951: <i>elettrotreno</i> , <i>via</i> Apennine Tunnel
Italy		Palermo	22 10	14 35	1951: electrified on mainland; diesel railcar in Sicily
		Turin	12 56	8 45E	1913: winter only <i>elettro</i>
Netherlands	Amsterdam	Maastricht	4 16	2 56E	
		Rotterdam	0 55	1 6	1913: <i>via</i> Gouda; 1951: <i>via</i> The
Portugal	Lisbon	Oporto	5 35	4 50	
Spain	Madrid	Barcelona	14 46	14 35	
		San Sebastian	13 22	8 0	1951: Talgo train
		Seville	11 40	12 0	
Switzerland	Basle	Lugano	6 17	4 25E	
	Geneva	Zurich	5 21	3 13E	1913: <i>via</i> Biel; 1951: <i>via</i> Berne

The Midland Railway Co. of Western Australia Ltd.

Increased working expenses reduced earnings despite record tonnages

The annual general meeting of the Midland Railway Co. of Western Australia, Ltd., was held on February 21 in London, Mr. W. M. Codrington, C.M.G., M.C., presiding in the absence abroad of Mr. Robert W. Adeane, O.B.E., Chairman.

The Chairman's circulated statement mentioned his speech last year when he described the impact on the company of the inflationary conditions which were affecting business in Western Australia, as in most other parts of the world. In a reference to the prospects for the year under review the meeting was told at that time that last December the company was called on to face an increase of £1 a week in the basic wage of the whole of the staff, but that application had been made for an increase of rates which was under consideration.

The results laid now before them reflected a continuation of the trends alluded to last year. An increase of over 30 per cent. in ton mileage demonstrated the increased amount of work done. Goods tonnage of 202,000 comfortably surpassed the previous maximum of 166,000 in 1929. The wheat harvest in 1951 was excellent, and the 100,000 tons which the company accepted for conveyance was a record. Thanks to that and to the admirable work of the staff, the tonnage carried during the year under review showed an increase

of 54 per cent. compared with the previous year.

Though the record traffics carried produced an increase of £88,000, or 35 per cent., in gross receipts, increased working expenses resulted in a decline in the net earnings of the railway department of £22,000, or 53 per cent. This was perhaps hardly surprising in view of the fact that statutory increases during the year produced a rise of some 30 per cent. in the basic wage rate, which in a full year would add some £40,000 to the wages bill. At the same time, another increase granted since the end of the accounting year would add a further £11,500 to the wages costs.

After making provision for renewals, the surplus of £13,445 covered the payment of 2 per cent. interest (£11,847) on the second mortgage cumulative income debenture stock by the bare margin of £1,598, added to the amount carried forward.

The decline in passenger traffic continued. The tonnage of goods traffic carried, which at the beginning of the current year showed signs of falling off—perhaps because of increased charges—now showed a small increase. The increase in charges operated during only two months of the 1950-51 accounting period, but would be reflected to a greater extent during the

current year, provided that there was no decline in tonnage carried. Similarly the wages increases, which only affected part of the former year's accounting period, would influence net earnings during the whole of the current year. Moreover, a further rise in wages cost of £11,500 had to be faced; the cost of all materials, local and imported, continued to rise.

In the course of his replies to questions, Mr. Codrington mentioned that a further increase in the basic wage rate ordered since the chairman's statement was printed was likely to cost the company £7,500 in a full year.

The report was adopted.

Questions in Parliament

Withdrawal of Railway Services

Sir Waldron Smithers (Orpington—C.) on February 25 asked the Minister of Transport if, in addition to the decisions of the Central and Transport Users' Advisory Committee and the assurance that the Railway Executive would inform the appropriate area of any proposed withdrawal of railway service, he would also introduce legislation to provide an appeal to an independent court of law.

Mr. J. S. Maclay in a written reply stated: No. For the reasons set out in the answer which I gave on February 4 to Mr. Smithers' question on this subject, I do not consider that legislation on the lines suggested is either necessary or desirable.

Capital Cost of New Locomotives

Mr. F. J. Erroll (Altrincham & Sale—C.) on February 25 asked the Minister of Transport what was the capital cost of producing 1,000 h.p. of new rail haulage capacity calculated at January, 1952.

Mr. J. S. Maclay stated in a written answer: The B.T.C. informs me that on May 1, 1951, the latest date for which figures are available, the capital cost per 1,000 d.b. h.p. of British Railways standard class "5" 4-6-0 steam locomotive and of the Co-Co electric locomotive for the Manchester-Sheffield line is £13,300 and £17,650 respectively. They are representative types.

Experience of Members of B.T.C.

Sir Wavell Wakefield (St. Marylebone—C.) on February 25 asked the Minister of Transport whether he had considered the fact that the experience of three of the four permanent Members of the B.T.C. had been primarily related to railways, and that the Commission lacked persons with wide experience in road transport; and what steps he proposed to take to remedy this matter.

Mr. J. S. Maclay in reply wrote: I am aware of the previous experience of the Members of the Commission, and I shall bear this factor in mind, among others, when considering appointments or re-appointments.

Transport in North London

Mr. Austen Albu (Edmonton—Lab.) on February 25 asked the Minister of Transport whether he had given consideration to the proposals for the implementation of the London Plan Working Party Report put forward by the Joint Conference of Local Authorities in North London; and whether he was now prepared to make a statement on priority measures for relieving pressure on transport in the North London area.

Mr. J. S. Maclay stated in a written answer: I am aware of the need for im-

proved transport facilities for the North London area, and I am at present studying the proposals. I am not yet able, however, to make a statement.

Freight Charges

Mr. Hector Hughes (North Aberdeen—Lab.) on February 25 asked the Minister of Transport if he was aware that this island was treated as a unit for postal purposes but not for the carriage of essential foods, such as fish and agricultural produce; that this caused unfair competition, which penalised producers and consumers; and if he would introduce legislation to amend the Transport Act to provide for standard freight charges irrespective of distance.

Mr. J. S. Maclay wrote in reply: There are fundamental differences between postal

charges and transport charges, and it would be impracticable for the B.T.C. to charge to all consigners standard freight rates irrespective of distance. I could not contemplate legislation on the lines suggested.

Bury Railway Bridge Disaster

Mrs. Barbara Castle (East Blackburn—Lab.) on February 25 asked the Minister of Transport when the report of the public inquiry into the Bury railway bridge disaster was to be published.

Mr. J. S. Maclay in a written answer stated: Investigations by the Inspecting Officer of Railways who conducted the inquiry are not yet completed, and I am not able to say when his report will be published. This will be done at the earliest possible date.

British Electric Traction Orders in 1951

A review of Metrovick work and progress

In our January 18 issue appeared an account of the activities of the British Thomson-Houston Co. Ltd. last year in the railway equipment field. During the same period the Metropolitan-Vickers Electrical Co. Ltd. has been engaged on important contracts for this country and overseas.

The 3,000-h.p. gas turbine locomotive for the Western Region—the first to be built in Britain—has been completed and is undergoing trials before going into service in the Western Region. Diesel-electric locomotives with Metrovick electrical equipment have been put into service by Coras Iompair Eireann; one of them is fitted with the new form of pivotless swing-link suspension developed by the company. An order for 48 1,100-h.p. diesel-electric locomotives for the Western Australian Government Railways is now in hand at the Stockton Works of Metropolitan Vickers-Beyer Peacock.

Some of the 58 mixed-traffic electric locomotives for which equipments were supplied to British Railways are now in service on the first stage of the Manchester-Sheffield-Wath electrification; electrical equipments for the seven six-axle passenger locomotives required for the final stage are in course of manufacture. The Stockton works is about to deliver its first complete locomotive, one of the 24 3,000-V. units for the Rede Mineira and Parana-Santa Catarina lines in Brazil. Forty 3,780-h.p. 1,500-V. locomotives are in hand for main line electrification in New South Wales. The first of ten 3,000-V. 1,200-h.p. 68-ton shunting units for the South African Railways is nearly complete.

Thirty 3,000-V. traction motors have been ordered for motor coaches on the Central Railway of Brazil. Fifty-two 3,000-V. electrical equipments for the Cape Western suburban service of the South African Railways are in course of manufacture.

Seventy-three sets of motor alternators with fluorescent lighting fittings and equipment have been supplied to the Netherlands Railways and installed in coaches for international express service; ten sets have been ordered for use in postal coaches. Orders are in hand for the Reef and the Cape Western sections of the South African Railways, and trial equipments are in service elsewhere. London Transport has placed a repeat order for 66 sets of fluorescent lighting equipment, the first of which, after being shown at the South Bank Exhibition, is now in regular operation.

A large order has been placed with Metropolitan Vickers-GRS Limited for extensions to a type "NX" interlocking installation put in twelve years ago at Johannesburg, where the station layout is now being enlarged.

Equipment for the centralised traffic control order for the New Zealand Government Railways will be completed in 1952. A quickly detachable relay type "A" has been developed for this type of installation. Further signalling and interlocking equipment ordered for New Zealand includes searchlight signals, point machines and factory-wired relay racks, in which the type "B" relays for the control of passing loop stations will be mounted with their plug-boards on angle-iron racks with all circuits ready wired, an innovation that will save much time and labour on site. An automatic diesel-generator set has also been ordered to give an a.c. supply for the signalling equipment.

A new type of plug-board for type "B" signalling relays has removable terminal assemblies, which enable the wires to be soldered to the terminals before assembly on the plug-board, so that there is no need to make these soldered joints in the confined space behind the board.

Contracts & Tenders

The 28 bogie goods brakevans which, as recorded in our February 22 issue, have been ordered from the Gloucester Railway Carriage & Wagon Co. Ltd. by the Crown Agents for the Colonies, will be for the Gold Coast Railway.

A recent report by the Board of Trade Special Register Information Service states that a call for tenders has been issued by the State Railways of Thailand for the supply of equipment for the pattern shop, carpenters' shop, and saw mill at Makasan Works. Traversers and bridge cranes are also required for the same works. The closing date for the receipt of tenders is 10 a.m. on March 27, and the authority for their receipt is the Committee for the Opening of Tenders, Store Office, Railway Administration, Bangkok. Enquiries may be made by telephone at the Board of Trade Special Register Information Service, Trafalgar 8855, extension 2513.

A further report from the Special Register Information Service states that

the Government of Pakistan has issued a call for tenders for 30 metre-gauge four-wheel hopper ballast wagons, type "MOB." The wagons are to be dismantled and crated for the Pakistan Railways (EBR) complete with body parts, underframes, vacuum brake fittings, draw gear, buffing gear and painted to PRS specification and drawings.

A copy of the tender documents is available for inspection by representatives of United Kingdom manufacturers at the Board of Trade, Commercial Relations & Exports Department. Copies of the tender documents and particular specifications can be obtained from the Office of the Director-General, Railways, Railway Division, Ministry of Communications, Karachi, on payment of Rs. 50 for each set. Copies of contract drawings can be obtained by direct application to Hodges Bennett & Co. Ltd., 59/60, Petty France, London, S.W.1, on payment of the cost of the drawings.

Tenders for the wagons must reach the Office of the Director-General, Railways, Railway Division, Ministry of Communications, Government of Pakistan, Karachi, by 12 noon on April 26.

Notes and News

Tothill Press Limited Bristol Office.—Tothill Press Limited, the proprietors of *The Railway Gazette*, have opened an office at 8, Upper Berkeley Place, Clifton, Bristol.

Vacancy for Civil Engineering Draughtsman.—The Sudan Railways require a civil engineering draughtsman, between 25 and 40 years of age, for service in the Sudan, to supervise the work in the drawing office, instructing subordinate staff in draughtsmanship, and preparation of designs as required. See Official Notices on page 251.

British Railways Coal, Iron and Steel Carriages.—During the 48 hours ended 6 a.m. on February 25 British Railways cleared 371,870 tons of coal from deep-mined pits and open-cast sites, bringing the week's total up to 3,218,310 tons. Iron and steel conveyed from the principal steel works during the week ended February 16 amounted to 200,454 tons.

Vacancy for a Locomotive, Carriage & Wagon Draughtsman.—The Peruvian Corporation have vacancy for a locomotive, carriage and wagon senior draughtsman, between 30 and 35 years of age. Candidates must have served a full general apprenticeship in an engineering workshop, preferably railway, and have had at least five years drawing office experience. See Official Notices on page 251.

Flame Hardening Locomotive Details.—A demonstration coloured film of the Peddinghaus automatic process for flame hardening locomotive details, using oxygen and town gas, was shown at the library of the British Iron & Steel Research Association on February 22. The film depicted the flame hardening of locomotive tyres, reversing links and motion bars. The temperature is controlled by a Peddinghaus milliscope which functions so rapidly that there is virtually no time lag. The film also included the flame hardening of teeth in machine cut gears, bearing surfaces of crankshafts for internal combustion engines, and also the bearing of surface machine tools made of cast iron,

lathes, grinding machines, and so on. The machines, which are semi-automatic in operation, are distributed in the British Isles and British Dominions by Surfard Limited.

G.W.R. (London) Operatic Society.—The 25th production of the G.W.R. (London) Operatic Society will be presented at the Scala Theatre, Charlotte Street, Tottenham Court Road, W.1, between March 5-8. The Society is producing "Viktoria and Her Hussar" by Albert Grunwald and Dr. Fritz Lohner-Beda, with many melodies by Paul Abraham, and the performances will begin at 7 p.m.

No Increase in East Kent Bus Fares.—The licensing authority for the South-Eastern traffic area has rejected an application by the East Kent Road Car Co. Ltd. for a general increase in fares. The authority considered that the company should wait until the results of twelve months' working at present fares were known.

Royal Funeral Train Locomotives.—In an editorial note on p. 197 in our last week's issue it was stated that the name and number plates which were transferred from the Windsor Castle to the Bristol Castle for the occasion of the journey of the Royal funeral train from Paddington to Windsor were "restored to the original locomotive the day after the funeral." In fact, the substitution of the nameplates and number plates will be permanent, as was stated in p. 219 of the same issue.

Sleeping Car Train for Newcastle United Supporters.—The first sleeping car train run for an English Cup football match conveyed 168 Newcastle United supporters from Newcastle to Swansea on the night of February 22. All the accommodation was booked as soon as details of the train were known. The all-in charge of £4 included fare, sleeping berth fee, and breakfast on the outward journey and supper on the return journey. In addition to the six third class sleeping cars, there were three open saloons which the passengers used after vacating the berths. Of seven other excursion trains run from Newcastle to Swansea, two were dining car trains, providing seats for 3,830.

Steel Allocations.—The Parliamentary Secretary to the Ministry of Supply, Mr. A. R. Low, said at Birmingham earlier this week that, while steel allocations in 1952 would not be all that manufacturers wanted, more steel would be delivered than in any other year. Mr. Low addressing members of the National Union of Manufacturers, said that defence would swallow up the extra, but there would be enough left to enable the engineering industry further to increase exports, as in the first month of the year. There would be increases in steel supplies in Period II, mainly benefiting the motor-vehicle, bicycle, and agricultural machinery industries. In later periods, allocations would pay regard to export performance and known export orders. The Government was about to introduce a new scheme for the allocation of alloy steel.

Demolition of Bridge at Euston.—No electric trains will run into or out of Euston between 8.15 a.m. and 5.30 p.m. on Sundays, March 2 and 9, while London Midland Region engineers are demolishing the 115-year old Amptill Road Bridge across the station as part of the next step in the £300,000 Euston improvement

scheme. While the work is in progress electric trains to and from Watford will terminate at Primrose Hill Station. Railway passengers may travel between Euston and Chalk Farm (for Primrose Hill) by London Transport Northern Line or bus services without extra charge. Electric services were similarly curtailed on Sunday, February 24.

Railway Students' Association.—Mr. D. J. Wansink, General Manager, Netherlands Railways, will read a paper on "Economic Problems of the Netherlands Railways in International Traffic" to the Railway Students' Association, London School of Economics, Houghton Street, Aldwych, W.C.2, at 6 p.m. on March 12.

Western Region, London Lecture & Debating Society.—The annual general meeting of British Railways, Western Region, London Lecture & Debating Society, will be held in the Clerks' Dining Club, Bishops Bridge Road, W.2, at 5.45 p.m. on March 13. The meeting will be followed by a reading and discussion of the prize essay.

Southern Region, Lecture & Debating Society.—On March 13, Mr. J. B. Garrett, Chief Officer (Organization), Road Haulage Executive, will read a paper entitled, "The Development of Road Haulage under the Transport Act, 1947" to British Railways, Southern Region, Lecture & Debating Society. The meeting will be held at the Chapter House, St. Thomas' Street, S.E.1, at 5.45 p.m.

Service Charge at State Airports.—The Minister of Transport & Civil Aviation, Mr. J. S. Maclay, has announced that, as a contribution to the cost of providing services and facilities for passengers at State airports, a service charge, payable by the air lines, will be imposed from May 1 for each passenger landing at a State airport in the United Kingdom. The charge will be 5s. for each person arriving from Europe. The service charge will be in addition to the existing landing fee paid by each aircraft.

Suspension of Electric Service Between Watford Junction and Hatch End.—Electric services will be suspended between Watford Junction and Hatch End on Sunday, March 2, because of work on the track. Until 4 a.m. on the Monday morning, electric trains to and from the Elephant & Castle and Euston will terminate at Hatch End. While the work is in progress steam trains will convey passengers between Watford Junction and Hatch End, calling at Bushey & Oxhey in both directions. Special bus services will also run between Watford Junction and Carpenders Park (Oxhey Estate).

R. A. Lister & Co. Ltd.—Presiding at the annual general meeting at Dursley on February 18 of R. A. Lister & Co. Ltd., the Chairman, Sir Percy Lister, said that the profit, before tax, was over £60,000 more than the previous year. The net profit, however, after taxation, because of the increase in the rate of income tax and profits tax, was over £8,000 less, despite a substantial increase in both the turnover and the gross profit. The amount set aside for depreciation of the fixed assets had increased from £134,386 to £176,248 as a result of purchase of additional plant and machinery. The historical cost basis of depreciation laid down by the Inland Revenue, he continued, was quite inadequate to provide the cash required to re-

Advertisements in these columns, where applicable, are subject to the Notification of Vacancies Order, 1952, with particular reference to Article 3 thereof.

SUDAN GOVERNMENT

SUDAN RAILWAYS require a **CIVIL ENGINEERING DRAUGHTSMAN** for service in the Sudan, aged 25-40, to supervise the work in the Drawing Office, instructing subordinate staff in draughtsmanship, and preparation of designs as required. Applicant must be neat, quick and accurate draughtsman, with a sound knowledge in design and construction of varied civil engineering structures preferably allied to Railway or Harbour works. He should be capable of taking out quantities and preparing specifications and estimates. Preference will be given to candidates with experience on reinforced concrete design. Appointment on Short Term Contract (with eligibility for bonus). Salary ranges between £E. 825 and £E. 1,050 per annum, period up to 5 years subject to satisfactory completion of probationary period of 2 years. Bonus of one month's pay for each year's service payable, subject to a maximum of six months' pay. A starting salary higher than the lowest rate may be given if justified by age, experience and qualifications. An initial Outfit Allowance of £E. 50 will be paid. Further information and application form will be sent on receipt of postcard only quoting "C. E. Draughtsman 4/1901" and name and address in BLOCK LETTERS addressed to the SUDAN AGENT in LONDON, Wellington House, Buckingham Gate, London, S.W.1.

FACTORY possessing Machine Tools to the value of £1,000,000 is desirous of selling entire plant. Machines of all types offered. Quick sale is essential for accommodation reasons. Only enquiries for specific Machines replied to. Box 405, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

place the plant and machinery at current replacement values. A further sum of £16,673 had been allocated to general reserve, bringing the total of these two reserves up to £800,000, and leaving a consolidated profit and loss balance to be carried forward of £524,776.

Gaboon Plywood Supplies.—Supplies of specially graded Gaboon plywood are now arriving in this country from the French Mills of Venesta Limited. Unlike most plywood made in France, the cementing of Venesta Gaboon is equivalent to AX.100 and is therefore of particular interest as it ranks as high quality Exterior Grade.

Washaway on Cape Main Line.—All traffic between Cape Town and the interior has been disrupted through the washing away of the track between Laingsburg and Beaufort West in the Karroo. Over 90 passengers for the liner *Stirling Castle* bound for Britain, had to be transferred to buses to enable them to reach the liner.

More Redundancy at Derby Carriage & Wagon Works.—A further 70 men have been reported to be redundant at Derby Carriage & Wagon Works, London Midland Region. This was stated to bring the total recently declared to be redundant to some 300. It was expected that it would prove possible to arrange other railway employment for most of the men affected.

Withdrawn London Midland and Southern Region Trains Restored.—Many of the London Midland Region trains withdrawn last October to enable crews to be transferred to vital freight traffic working are being restored on March 3. The services affected are: St. Pancras-Bedford; St. Pancras-Barking; and Bedford-Northampton. Some Southern Region services between Charing Cross and Hastings and Bexhill West, Tunbridge Wells West and Eastbourne, and Waterloo and Basing-

LOCOMOTIVE, CARRIAGE and WAGON SENIOR DRAUGHTSMAN 30/35 years of age. Qualifications: Must have served a full general apprenticeship in an Engineering workshop (preferably Railway) and have had at least five years' drawing office experience with some time in an executive capacity. A knowledge of Spanish an advantage. Future prospects. Apply to the Secretary, PERUVIAN CORPORATION LIMITED, 144, Leadenhall Street, London, E.C.3.

A COMPANY manufacturing diesel-electric locomotives requires the services of a Senior Engineer with wide experience and first class ability in the electrical and mechanical design of D.C. Traction Motors and Generators. The post would be a senior one and would carry a salary of about £1,800 per annum, depending on qualifications and experience. An advantageous Staff Assurance Scheme is in operation and the successful applicant will be given a three year contract. Applications will be treated with strict confidence. Replies giving full details of experience to Box 401, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

FOR SALE: Broadbent 6-ft. Heavy Duty Boring and Facing Lathe. With 5-ft. 6-in. gear-driven chuck. All-gear head driven by 15-h.p. motor. 400/3/50. Wt. about 13 tons.—H. BELL (MACHINE TOOLS) LTD., Walter Street, Leeds, 4. Tel. 37398.

A COMPANY manufacturing electric traction equipment invites applications for the post of Production Development Engineer to take full charge of the manufacture of D.C. Traction Motors and Generators. Applicants should possess first-class practical engineering ability and must have a wide experience of D. C. Traction machine manufacture. They will be required to work in conjunction with design Departments and will be fully responsible for the product. The post will carry a salary commensurate with the responsibility and a figure of £850 per annum is envisaged. Applications, which will be treated in strict confidence, giving full details of past experience, qualifications, etc., should be sent to Box 406, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

stoke, which were suspended at the same time, will be restored on April 7. The restoration of weekend through trains between York and Bournemouth West (10.25 a.m. from York) and Bournemouth West and York (11.16 from Bournemouth West) is being considered. Details of the suspended services were given in our October 19, 1951, issue.

"Devon Belle" Being Withdrawn.—The "Devon Belle" is being withdrawn as an economy measure this summer, because, it is stated, Saturday is the only day on which it is well supported. To take its place an extra train will run from Waterloo and from Ilfracombe at noon on Saturdays, beginning on July 5.

Co-ordination of International Railway Organisations.—On conclusion in January of an agreement between the various international non-Governmental railway organisations, it became necessary to review the circulars and other documents through which effect is given to the decisions reached by these bodies, so as to eliminate duplication. Meetings have been held, and the functions of each organisation under the aegis of the International Union of Railways (U.I.C.) clearly defined. This work will be continued at the meetings in Brussels and Wiesbaden of the sub-committees of the First, Second, and Third Committees and of the Fourth and Fifth Committees respectively, to be held during the week commencing March 3. Drafts of revised circulars to be retained by the U.I.C. will be drawn up for the approval of the Committees, which meet in Lausanne-Ouchy from May 26 to June 7.

Increase in Unemployed.—An increase of 75,800 in the number of unemployed in Great Britain was recorded between December 10 and January 14. The January level of unemployment represented 1.8

COMMISSIONER for Railways, New South Wales, Australia. Tenders are invited for the supply and delivery f.o.b. British or Continental port of 30,000 English tons, 107 lb. flat bottomed steel rails. Specification, drawings and tender forms may be obtained from the AGENT GENERAL FOR NEW SOUTH WALES, 56, Strand, London, W.C.2 (Reference F.7104), to whom tenders are returnable until 11 a.m. on Monday, 24th March, 1952.

WE buy used or unserviceable Steel Files at good prices in lots of 2 cwt. or more.—THOS. W. WARD LTD., Reusable Steel Dept., Albion Works, Sheffield.

WORKS MANAGER for Locomotive Workshops, Southern Railway of Peru required. Must be a Mechanical Engineer with practical locomotive workshop experience. Preferably 35/40 years of age and with a knowledge of the Spanish language. Apply to the Secretary, PERUVIAN CORPORATION LIMITED, 144, Leadenhall Street, London, E.C.3.

THE PERUVIAN CORPORATION LIMITED—CIVIL ENGINEERING DRAUGHTSMAN for Southern Railway of Peru, age 25 to 30. Knowledge of instrument work, design of reinforced concrete and steel constructions and some practical experience. Duties not confined to drawing office. Scope for energetic worker. Apply to the Secretary, 144, Leadenhall Street, London, E.C.3.

BOUND VOLUMES.—We can arrange for readers' copies to be bound in full cloth at a charge of 25s. per volume, post free. Send your copies to the SUBSCRIPTION DEPARTMENT, Tothill Press Limited, 33, Tothill Street, London, S.W.1.

JUST PUBLISHED.—Twenty-Five Years of the North Eastern Railway, 1898-1922. By R. Bell, C.B.E., Assistant General Manager, N.E.R. and L.N.E.R. Companies, 1922-1943. Full cloth. Cr. 8vo. 87 pages. 10s. 6d.—*The Railway Gazette*, 33, Tothill Street, London, S.W.1.

per cent. of the total number of employees, compared with 1.4 per cent. on December 10 and 1.6 per cent. in January, 1951. The Ministry of Labour statistics show changes in the distribution of manpower during 1951. The number in manufacturing industries increased during the year by about 85,000, with a marked redistribution in this group. Metals, engineering, and vehicle industries gained about 118,000 workers. There was an increase in the number of coal miners in the latter part of 1951. The rising cost of living caused many women to enter employment.

Road Haulage Association.—The principal guest at the Road Haulage Association annual luncheon on May 13 will be Mr. J. S. Maclay, Minister of Transport. The luncheon will be held at Grosvenor House, Park Lane, W.1.

Passenger Charges Scheme, 1952.—The Transport Tribunal has announced that the British Transport Commission Passenger Charges Scheme, 1952, which is the Charges Scheme, 1951, as altered by the Tribunal, is confirmed. Parts I and III, relating mainly to British Railways suburban services, including the Tilbury Line, and to London Transport rail and road services, apply from March 2. The remainder of the scheme applies from May 1. Reference to the Transport Tribunal conclusions on the Passenger Charges Scheme, 1951, was made in our issue of January 25.

Railway Correspondence & Travel Society. London Rail Tour.—The Railway Correspondence & Travel Society is organising a rail tour, covering lines both North and South of the Thames, on Saturday, March 29. The special train will leave London Bridge Station at 2.20 p.m., and will be routed via:—New Cross Gate; the East London Line; Liverpool Street; Channel-

sea Junction; Loughton Branch Junction; South Tottenham; Seven Sisters; Churchbury; Cheshunt; Tottenham, Tottenham West Junction; Seven Sisters; Palace Gates; Bounds Green; Kings Cross (York Road); Snow Hill Tunnel to Cannon Street, where the arrival time will be 6.08 p.m. The visit will be 9s., plus 6d. for a detailed itinerary if required. Applications, accompanied by remittance and stamped addressed envelopes, should be made to Mr. R. K. McKenny, 46, Friern Barnet Lane, London, N.11. The tickets will be despatched ten days before the tour.

Forthcoming Meetings

- February 29 (Fri.).—Institution of Mechanical Engineers, Storey's Gate, St. James's Park, S.W.1, at 5.30 p.m. "Gear-Tooth Stresses and Rating Formulae," by Dr. H. E. Merritt.
- February 29 (Fri.).—Royal Engineers (Railway Operating Division) Officers' Annual Reunion Dinner, at the Transportation Club, 44, Wilton Crescent, S.W.1, at 6.30 for 7 p.m. Colonel V. M. Barrington-Ward will preside.
- March 1 (Sat.).—Railway Students' Association. Visit to Doncaster and York.
- March 1 (Sat.).—British Railways, Southern Region, Lecture & Debating Society. Visit to Toton marshalling yard.
- March 3 (Mon.).—Institute of Transport, Metropolitan Section, at 80 Portland Place, W.1, at 5.30 for 6 p.m. "The Organisation and Progress of the Ulster Transport Authority," by Mr. J. A. Clarke, General Manager, Ulster Transport Authority.
- March 3 (Mon.).—Historical Model Railway Society, at the headquarters of the Stephenson Locomotive Society, 32, Russell Road, W. 14, at 7 p.m. "Irish Railways," by Mr. H. C. Casserley.
- March 3 (Mon.).—Society of Engineers, in the apartments of the Geological Society, Burlington House, W.1, at 5.30 p.m. "The Randupson Process for Moulding in the Production of Steel and Bronze Castings," by Mr. G. L. Hancock.
- March 4 (Tue.).—Permanent Way Institution, Leeds Section, at the Leeds Church Institute, Albion Place, Leeds, 1, at 7 p.m. "Mining Subsidence as it Affects British Railways," by Mr. E. Trotter.
- March 5 (Wed.).—Belfast Association of Engineers. "Engineering Break-downs," by Mr. J. Evers.
- March 5 (Wed.).—Institution of Railway Signal Engineers, at the Institution of Electrical Engineers Savoy Place, W.C.2, at 6 p.m. "The Track Circuit," by Mr. D. G. Shipp.
- March 7 (Fri.).—Institution of Locomotive Engineers, Luncheon at the Dorchester Hotel, Park Lane, W.1, at 1 p.m. Chairman: Mr. Julian S. Tritton, President.
- March 7 (Fri.).—Belfast Association of Engineers. Annual Dinner and Dance.
- March 7 (Fri.).—Scottish Society of Students of the Locomotive, at 302, Buchanan Street, Glasgow, C.2, at 7.30 p.m. "The Possibilities of Railway Electrification in Scotland," by Mr. F. A. Plant.
- March 8 (Sat.).—British Railways, Southern Region, Lecture & Debating Society. Visit to Toton marshalling yard.
- March 10 (Mon.).—Road Haulage Association, Metropolitan & South Eastern Area. Banquet and Ball, Grosvenor House, Park Lane, W.1.

Railway Stock Market

Business in stock markets has remained on a restricted scale with prices in most sections tending to recede in the absence of demand, although little selling was reported. Sentiment was affected by a reaction in British Funds, which brought $3\frac{1}{2}$ per cent. War Loan back to $79\frac{1}{2}$ earlier this week, accompanied by renewed talk that a further increase in the Bank rate may be in prospect, although this is not generally expected. Another reason for the setback in gilt-edged stocks is the fear that the rearmament programme may make additional taxation inevitable. An increase in income tax would, of course, hit fixed-interest investments; but although the City believes that some modifications and adjustments may be proposed, a rise in the standard rate of income tax is considered unlikely.

A feature this week has been buying of Kaffir gold shares, and there has also been better demand for other shares of overseas concerns which will not be subject to our E.P.T. Nevertheless the recent fall in industrial shares may more than discount the effects of E.P.T., and if, as hoped, the existing Profits Tax is modified, there may be scope for a rally in share values after the Budget. A factor which is leading to selling is the fact that early next month a call of £1 per share, which will require over £10,000,000, is due on Imperial Chemical new shares. Investors requiring money to meet this instalment on the shares have had to sell some of their other investments. Many companies will before long face the problem of raising more capital. If markets rally after the Budget there will probably be public issues of shares, but otherwise many more offers confined to shareholders can be expected.

Feature in foreign rails has been a sharp advance in La Guaira ordinary stock following the statement on the amount of the "pay-out," which exceeded general estimates. The price, after rising to 110, lost a small part of the advance at 108½. After their recent modest improvement, United of Havana stocks receded; the 1906 debentures came back to 17½. There was a little speculative buying of Manila "A" debentures around 66 and of the preference shares around 68. 6d. in the hope that representations will be made to the Philippine Government for fair and equitable treatment in respect of the 11 years' arrears of interest payments on the

£13,236,000 of 5 per cent. refunding bonds of the Manila Railroad Company which form virtually the only asset of the Manila Railway Company.

Canadian Pacific has strengthened a little to 562½ in response to attention drawn to the prospect of growing income from the company's oil interests. There has been buying of Canadian Pacific 4 per cent. preference stock, which at around 63½ yields over 6½ per cent., and this seems attractive, even allowing for the fact that this stock is non-cumulative as to dividend. French railway sterling bonds were steady with both Midi and Orleans 4 per cents. at 83½, at which there is a yield of over 5½ per cent. Elsewhere, Antofagasta ordinary and preference at 15½ and 63½ respectively have shown a steadier tendency. Nitrate Rails shares kept at 21s. and Taltal at 19s. 3d. Leopoldina ordinary attracted a little buying around 11 and the preference around 28. Leopoldina Terminal debentures have kept at 15½ but the ordinary shares eased to slightly under 9d. Brazil Rail Bonds were 5 and San Paulo 10s. ordinary units 13s. 9d. Dorada Railway ordinary stock was quoted at 40½, and International Railways of Central America 5 per cent. gold bonds at 130 with the common shares at 10½, but quotations did not appear to be tested by dealings.

Among road transport shares, South-down receded to 91s. 3d., West Riding were 36s., Lancashire Transport were 50s., Maidstone & District changed hands around 61s. and B.E.T. deferred stock declined to £365.

The higher price of steel failed to affect engineering shares as the increase had been expected and was partly responsible for the recent downturn in share values. The prevailing view is that although denationalisation of steel will not be finally settled until 1953, it may be known before long whether the Government intends to give engineering companies an opportunity to buy back their steel assets.

Shares of locomotive builders and engineers generally showed only small movements. Beyer Peacock were 30s. 9d., Birmingham Carriage eased to 33s., Hurst Nelson were 53s. at Glasgow, and North British Locomotive 16s. 3d. Vulcan Foundry changed hands around 21s. 9d. Gloucester Wagon were 12s. 9d., Wagon Repairs 5s. shares 10s. 6d., and Charles Roberts 22s. T. W. Ward have been steady at 70s. 3d.

Traffic Table of Overseas and Foreign Railways

Railway	Miles open	Week ended	Traffics for week		No. of week	Aggregate traffics to date				
			Total this year	Inc. or dec. compared with 1949/50		Total	Increase or decrease			
						1950/51				
South & Cen. America	Antofagasta ..	811	15.2.52	£ 140,830	+	£ 83,560	7	£ 962,510	+	£ 321,690
	Costa Rica ..	281	Jan., 1952	c1,495,633	+	c340,108	31	c8,756,306	+	c1,420,052
	Dorada ...	70	Jan., 1952	34,370	—	7,187	4	34,370	—	7,187
	Inter. Ctl. Amer. ...	794	Dec., 1951	\$1,148,425	—	\$56,983	52	\$13,126,431	—	\$339,796
	Paraguay Cent. ...	274	28.12.51	G289,547	+	G102,688	26	G8,823,911	+	G3,556,978
	Peru Corp. ...	1,050	Jan., 1952	\$8,777,000	+	\$758,000	30	\$58,048,000	+	\$3,899,000
	" (Bolivian Section)	66	Jan., 1952	Bs.16,004,000	+	Bs.1,517,000	30	Bs.111,091,000	+	Bs.26,690,000
	Salvador ...	100	Nov., 1951	c140,000	—	c28,000	22	c635,000	+	c112,000
	Taltal ...	147	Jan., 1952	\$2,649,000	+	\$1,043,000	30	\$14,926,000	+	\$4,063,000
	Canada	Canadian National†	23,473	Nov., 1951	18,035,000	+	401,000	48	190,178,000	+
Canadian Pacific† ...		17,037	Dec., 1951	11,865,000	+	591,000	52	142,771,000	+	16,779,000
Various	Barsi Light* ...	167	Jan., 1952	23,812	—	5,220	42	332,580	+	46,612
	Gold Coast ...	536	Dec., 1951	378,543	+	72,605	39	2,473,919	+	208,373
	Mid. of W. Australia	277	Nov., 1951	62,093	+	22,023	22	304,756	+	111,372
	South Africa ...	13,398	26.1.52	1,996,297	+	156,262	43	82,110,877	+	8,376,351
	Victoria ...	4,744	Oct., 1951	2,172,730	+	1,149,080	17	—	—	—

* Receipts are calculated at 1s. 6d. to the rupee

† Calculated at \$3 to £1